



**18000 Crosby Eastgate Road
Crosby, Texas 77532**

EMERGENCY RESPONSE PLAN

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SAFP7097.05

Controlled Document

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I. INTRODUCTION and OVERVIEW

(A) Purpose, Scope and Approval

The Crosby Emergency Response Plan (ERP) is in place to ensure employee safety, as well as the safety of visitors to, and the community surrounding, the Arkema Crosby, Texas facility in the event of an emergency. The purpose of this Emergency Response Plan is to:

- Ensure employee safety and protecting the public health and the environment in the event of an emergency at the Crosby, TX plant
- Establish responses plans to various types of plant emergencies before they occur;
- Serve as a guide for actions to take in the event of an actual emergency;
- Provide information about this plan to emergency responders and members of the community; and

The intent of this plan is to satisfy OSHA's requirements, found at 29 CFR 1910.38 for Employee Emergency Plans And Fire Prevention Plans, and 29 CFR 1910.120 for Hazardous Waste Operations, and Process Safety Management of Highly Hazardous Chemicals 29CFR1910.119, Spill Prevention Control and Counter Measure (SPCC) 40CFR112, which requires Arkema Inc. to have a written emergency response, contingency and action plan.

Copies of this plan may be found in the following locations (as well as InfoLup):

1. Building 4A – HES Department
2. Bldg 4 – Administration Office
3. MPU – Shift Supervisors Office
4. Security Building (38)
5. External Copies to: Crosby Fire Department, North Channel LEPC, and Harris County Fire Marshall

APPROVAL

The Emergency Response Plan has been reviewed and approved by the undersigned.

_____ Plant Manager	_____ Date
_____ HES Manager	_____ Date
_____ Safety Engineer	_____ Date
_____ Operations Manager	_____ Date

(B) Associated References and Forms

REFERENCES

- ARKEMA Chemicals Crisis Communications Manual
- ARKEMA Crosby Policies and Procedures
 - Safety Equipment and Inspection Manual (SAFP7000)
 - General Loss Control Rules (SAFP7003)
 - Site Security Plan (SAFP7042)
 - Incident Reporting and Investigation (SAFP7047)
 - RCRA Contingency Plan and Subpart BB Plan (ENVP8068)
- 29 CFR 1910.56, Fire Brigades
- 29 CFR 1910.38, Employee Emergency Plans and Fire Prevention Plans
- 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response
- 29 CFR 1910, Subpart I, Personal Protective Equipment
- 29 CFR 1910.146, Permit Required Confined Spaces
- 29 CFR 1910.151, Medical Services and First Aid
- 29 CFR 1910 Subpart Z, Toxic and Hazardous Substances
- FEMA's *Emergency Management Guide for Business and Industry*

FORMS

- **Emergency Response Drill Critique Form (SAFF7141)**
- **Emergency Planning and Response Self Assessment Guide**
- **Emergency Response Safety Plan – Appendix A**
 - Bomb Threat Log Sheet
 - Emergency Response Plan
 - Incident Commander Checklist
 - Safety Officer
 - Operations Officer
 - Medical Team
 - Media/Communications Officer
 - Decontamination Worksheet

(C) Responsibilities

1. Plant Manager

- The Plant Manager has designated the site HES Manager and/or Safety Engineer as the plan administrator(s) and coordinator(s) who have the overall responsibility for the Emergency Response Plan (ERP).
- Designate the Health, Environment and Safety/ Loss Control (HES/LC) Manager as having overall responsibility for this Emergency Response Plan.
- Verify that current and accurate plans are in place to respond to site emergencies.
- Provide support for the resources necessary to carry out the duties and responsibilities of the Plan.
- In the event of a Level 2 or Level 3 incident will report to the Bldg 4 conference room and establish the Emergency Operations Center (EOC) for the duration of the emergency if the building is in a safe zone.
- Participate as a member of the Unified Command as needed
- Provide necessary technical support and company representation through interaction with plant personnel and emergency response agency representatives.

2. HES Manager and Safety Engineer

- Developing and maintaining a written ERP;
- Notifying the local and corporate authorities in emergencies when warranted;
- Taking security measures to protect employees;
- Integrating the ERP with any other existing general emergency or contingency plan for the site;
- Ensuring that procedures for reporting emergencies, the location of safe exits, and evacuation routes for site employees are developed and communicated to all employees;
- Coordinating drills to acquaint employees with emergency procedures and to determine the effectiveness of the ERP;
- Ensuring that designated employees who are members of the emergency response team have the necessary training requirements;
- Designating individuals to serve as Incident Commanders and their backups;
- Deciding on the level to which the emergency response team(s) will respond;
- Ensuring that the emergency response team is adequately equipped;
- Maintaining records as necessary;
- Ensuring that the facility meets all local fire codes and building codes; and
- Reviewing and updating the ERP at least annually.
- Interface and maintain communication with the local fire department and emergency services.

(D) Classification of Emergencies

Emergencies are classified into three categories according to the level of response required. If an employee involved in the emergency response is unsure of what level emergency has occurred, that person should contact their supervisor immediately.

1. Level One Emergency

Level One Emergency is any localized emergency situation (vapor release, fire, chemical spill, etc.) that can be safely handled by available manpower and equipment, and which will not affect the community. Notification of the shift supervisor is required.

Level One Emergency will not activate the emergency alarm system.

Examples of Level One Emergencies include:

- Injuries that are easily handled by plant CPR/First Aid trained personnel;
- Small fires easily extinguishable with water or a portable extinguisher; and
- Small chemical spills or releases that can be safely controlled and contained. Level One spills or releases are those that do not present danger to employees or the community.

2. Level Two Emergency

A Level Two Emergency is any emergency situation which may involve serious personnel injury, affects a large part of one or more areas in the plant, or which may affect the surrounding community and which may require additional assistance from outside responders.

A Level Two Emergency will activate the Emergency Alarm System when it involves fires and non-contained chemical releases.

Examples of Level Two emergencies include:

- Employee injuries which require the activation of plant medical team and/or outside agencies;
- Fires which are likely to present a safety hazard to employees or cause damage to property and which can be controlled by in-plant responders;
- Chemical spills or releases which may present a safety hazard to employees and/or the neighboring community; and
- Off-site influences that may require changes in the plant's activities.

3. Level Three Emergency

A Level Three Emergency is a major situation affecting both the plant and surrounding community, which will require all available plant emergency responders along with outside emergency responders.

A Level Three Emergency will activate the emergency alarm system.

Examples of Level Three Emergencies include:

- Injuries to multiple in-plant personnel or to outside populations that may require response by outside agencies.
- Fires and/or other events that seriously affect in-plant personnel and facilities and outside population or facilities and go beyond plant property boundaries and may require the assistance of outside agencies;
- Chemical spill/releases that may have off-site impact; and
- Problems that will cause an evacuation of personnel from this plant.

(E) Emergency Planning and Risks

1. Identification of Vulnerable Areas

A comprehensive emergency preparedness survey shall be performed every two years to identify and evaluate emergency response needs for all probable emergencies. This survey shall include a review of regulatory requirements and potential “off-site” emergencies.

The closest population that could potentially be affected by activities at the Arkema Inc. Crosby plant is the residential area northwest of the facility. In addition, motorists on U.S. Highway 90 (running nearly parallel to the plant on the south side) may be affected by activities at the plant.

2. Potential Emergency Situations

Taking into account the characteristics of materials present in the facility, the nature of the processes, the presence of persons in and around the facility, the site topography, and possible weather conditions for the area, the following types of emergency situations are possible:

- Decompositions and/or fires
- Releases of harmful vapors
- Spills of oil or hazardous materials
- Sudden loss of utilities
- Flooding
- High winds from tornado or hurricane
- Medical emergencies such as heart attack, burns, injury due to accident, injury from contact with or exposure to hazardous materials, etc.
- Bomb threat

3. General Response Guidelines

The following is intended as a guide of general response information for hazardous chemicals. Information on the appropriate level of personal protective equipment is available from the emergency response PPE matrices in Appendix C

a) Acids

Non-essential personnel shall evacuate the immediate area of the release. Minor acid releases can be washed into the wastewater sump for neutralization at wastewater treatment. Larger acid releases should be neutralized with soda ash prior to being washed into the sump. Remediation of the site should be performed using normal and appropriate procedures as approved by the HES Department.

b) Caustics

Personnel who are not responding to the release should evacuate the immediate area. Minor liquid caustic releases can be washed into the wastewater treatment sump for neutralization. Larger liquid caustic releases should be neutralized prior to being washed into the sump. Remediation of the site should be performed using normal and appropriate procedures as approved by the HES Department.

c) Oxidizers

Personnel who are not responding to the release should evacuate the immediate area. Absorb the liquid with absorbent then flood the spill area with large amounts of water. The absorbent should then be containerized and labeled for future disposal by the HES Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the HES Department.

d) Compressed Gases

Doors and windows must be opened to provide ventilation. Personnel who are not responding to the release should evacuate the immediate area, and depending on the severity of the release, evacuation of the building may be required. Check the area for the oxygen concentration and the lower explosive limit (LEL) prior to taking further action. If the concentration is 10% of the LEL, or greater, evacuate the building. If the release cannot be controlled, and it is a cylinder that is leaking, move cylinders out of the building if it can be done safely. Otherwise, allow the cylinder to completely vent in-place. If the release is from a piping system, shutdown the effected system safely.

e) Flammable gases or liquids

Appropriate PPE for a flammable material release may include flame retardant clothing, SCBA, gloves, and a hard hat. Remove ignition sources. Open doors and windows to provide ventilation. The immediate area should be evacuated by personnel who are not responding to the release, and depending on the severity of the release evacuation of the building may be required. Check the area for the oxygen concentration and the LEL prior to taking further action. If the concentration is 10% of the LEL, or greater, evacuate the building. The responder must have a fire extinguisher of the proper classification. Liquid releases should be absorbed with absorbent material, and solids should be cleaned up. All materials should be containerized for future disposal by the HES Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the HES Department.

II. EMERGENCY ACTION PLAN

The purpose of the Emergency Action Plan (EAP) is to make employees aware of the actions they must undertake in an emergency.

(A) Initial Alert

The following steps comprise the alert procedures to be used upon discovery of an emergency situation.

- The first person to become aware of an emergency shall activate the Emergency Response Plan by contacting their supervisor (incident commander)
- The shift supervisor (Incident Commander) shall evaluate the level of emergency and activate the appropriate alert/notification and/or response team(s).
- Whenever an actual or imminent danger exists, all facility personnel (including visitors and contractors) will immediately be alerted via site emergency alarm, PA system an/or radio.
 - **Note: The responder will contact the security guard to immediately activate the emergency alarm or site PA system. The security guard will also secure the main gate.**
- Employees shall observe the windsocks, move crosswind to the nearest safe assembly area, and shelter-in-place. Do not drive vehicles during an emergency unless authorized by the Incident Commander or communicated through the PA System.
- Emergency responders shall report to the designated staging areas with Bunker Gear and SCBA's, depending upon the location of the emergency and directions from the Incident Commander.
- Headcounts will done at the staging area by the IC, or designee. It is not necessary to wait for the headcount to be complete for the IC to send responders to the scene (the IC needs to be aware of who is entering the initial hot/warm zone).
- In the case of a medical emergency, it may be necessary that the first person on the scene contact the medical responders directly.
- Upon completion of the alert procedure, the Incident Commander will assume responsibility for on-site response efforts and have someone contact the Crosby Fire Department and EMS depending on the emergency (when in doubt always call!).

(B) Notification of Facility Personnel

Facility personnel will be notified by one, or a combination of, the following mechanisms: 1) radio 2) plant emergency alarm, and 3) plant public announcement system. The activating control panel for the alarm system is located in the Building 4 front office. Once activated, the alarm system utilizes an emergency siren. Safety Horns may or may not be utilized to indicate the emergency situation as a backup to the systems identified above.

Plant contacts or plant personnel shall direct visitors and contractors to the nearest safe assembly area. Contractors and visitors shall not leave the plant site until a headcount has been completed.

(C) Assembly and Shelter-in-Place

In the event of an emergency, all non-essential personnel are to report to the nearest designated safe assembly area. Facility assembly points are listed in Table 1.

Table 1: Assembly Points and Contact Information

Assembly Point	Location	Assembly Point Phone	Other Contact #'s
Main Admin Building	Bldg 4 Front Lobby	Lobby Ext. 444	Ext. 436 or Ext. 454
HES Building 4A	Bldg 4A East End	Env. Engineer Ext. 430	Ext. 415
Logistics Office	Bldg 1 Break Rm	Break Rm Ext. 457	Ext. 431
Maintenance Shop	Bldg 42	Lunch Room Ext.402	Ext. 487
Maintenance Stores	Office	Ext. 408	Radio
QC Laboratory	Bldg 16 South side	Chemist Ext. 424	Radio
MPU Control Room	Control Room	Operator Ext.447	Ext. 448
MPU (Bldg 29 Office)	Outside Lunch Rm	Ext. 423	Ext.458
WWT Control Room	Bldg 14 North side	WWT Operator Ext. 453	Radio

NOTE: Most senior person at each assembly point is responsible for conducting a headcount at the assembly point.

The security guard will contact each assembly area contact person by radio first then by phone if needed. Personnel shall remain at the assembly point until instructed otherwise via plant alarm, radio, or telephone. In the event of a major leak or spill, always note the wind direction when evacuating or reporting to an assembly point. Check the plant windsocks and always move as quickly as possible to a location crosswind of the release. Do not drive vehicles unless authorized by the Incident Commander or communicated through the PA System. Once you are far enough to the side of the release, move crosswind to the closest assembly area.

Depending on the emergency situation, employees at each assembly point may be directed to shelter-in-place. To shelter-in-place, the following must be done:

- Go inside immediately.
- Shut all doors and windows.
- Turn off AC/heating to stop outside air from getting inside.

- Listen for instructions over radio channel 1 and/or PA.
- Use the phone only for Emergency Communications

(D) Head Count

When the emergency alarm system is activated, the following actions must be taken:

- A head count shall be performed to account for all personnel. When Security personnel are not in the plant, the Production Supervisor is responsible for ensuring a head count is performed at all assembly points.
- Security personnel shall call each assembly point by radio first then by phone if needed. Security personnel shall request the full names of those present and check them off as they are provided by the assembly area contact. Security will utilize an automatic updating list of onsite personnel generated by the Kronos® system.
- The Security Guard shall compare the master list of all persons on-site at the time of the emergency to the list obtained by combining head counts with the Kronos® system.
- The “unaccounted for” information shall be communicated to the Incident Commander and/or Production Supervisor immediately.

(E) Search and Rescue

In the event that plant personnel, visitors, or contractors are unaccounted for in an emergency situation, efforts shall be made to locate the missing personnel. The Incident Commander shall initiate a search for any unaccounted for personnel.

1. Initial Search

The initial search shall be accomplished using emergency communication devices with the assistance of Security personnel. Plant radios and/or public address speakers shall be used to relay a message for the missing person(s) to report to a designated area immediately. Security personnel shall contact each assembly point to determine the “Point Last Seen” of the missing person.

2. Physical Search

If missing person(s) cannot be located using emergency communication devices, a physical search shall be conducted. The Incident Commander shall designate members of the Emergency Response Team to act as searchers. These searchers, under the direction of the Incident Commander, will check all normally unoccupied areas outside of the incident area, including conference rooms, store rooms, storage buildings, high noise areas, and areas where the emergency alarm may not have been heard or where public address speakers are missing. Searches will employ the buddy system, working in pairs. Searches will not take place in areas noted as “Hot Zones.” As each area is cleared, the Incident Commander shall be notified.

If a search of these areas does not produce the missing person(s), a limited search of the incident scene may be conducted. Using a plot plan, the Incident Commander with the assistance of the Safety Officer will section off a circular zone around the incident scene. The Incident Commander shall then section off an inner circle in the zone beyond which no searching may be done. Searchers are not allowed to enter structures on fire, confined spaces, or dangerous atmospheres. Searchers shall start at the scene command area and work clockwise around the zone until they reach the inner circle. Searchers must wear the appropriate personal protective equipment, as prescribed by the Safety Officer, and must maintain constant radio contact with the Incident Commander.

3. Rescue Operations

Upon discovery of any missing persons, the Incident Commander must be immediately notified. Searchers will assist personnel that they discover in evacuating the incident area. If the Searchers discover an immobile victim, the Medical Team shall be immediately notified. The Medical Team shall work closely with the Incident Commander and Safety Officer, who shall direct the Searchers in removing the victim to a non-hazardous location, if possible. The Medical Team shall not be permitted to enter the exclusion zone of the incident.

4. Confined Space Rescue

As required by the facility's Confined Space Entry Procedure, a confined space rescue team must be on-site at the time of any permit-required confined space entry. A contract service shall be used as confined space rescue team. Plant personnel shall assist the rescue team in developing a rescue pre-plan before the entry begins, but plant personnel will not participate in the physical rescue.

In the event someone enters a permit-required confined space (whether intentional or not) and no rescue team is on-site, the Incident Commander shall immediately be notified. A confined space rescue team shall be called out as soon as possible.

(F) Plant Evacuation

The Incident Commander with the assistance of the emergency response organization will make the decision to evacuate the facility if control measures will not protect employees within the plant. Evacuation will be conducted with verbal instructions being given over the plant public address system and/or plant radios by the Incident Commander and/or Safety Officer.

The Plant Evacuation Assembly Points are located:

- Evacuation Point #1 – Main Gate #1 at the Security Building
- Evacuation Point #2 – Back Gate #3 Near Maintenance Shop

Once employees, contractors, and visitors are assembled at the evacuation points, the Safety Officer, with the assistance of the Security Guard, shall conduct a headcount. The information will be communicated to the Incident Commander. The evacuation to a safe off-site assembly area shall be performed with vehicles unless instructed otherwise. Employees may not leave the plant site until a headcount is performed. The primary established off-site evacuation assembly point is the Crosby Church (Hwy 90) and the secondary point is the Knights of Columbus Hall on Crosby-Dayton Road.

(G) Staging of Emergency Responders

Upon activation of the plant emergency response teams, the Incident Commander shall direct responders to report to an initial staging area. The Initial staging areas for level II and III emergencies is located in the Building 4A parking lot. The staging area for level I emergencies is dependent on the location of the emergency. The maintenance shop parking lot may be used as an alternate staging area for level II and II emergencies. Upon assessment of the emergency the incident commander may move the staging area closer to the operating unit. Selection of the staging area must be based on the location and nature of the emergency as well as wind direction and proximity to necessary equipment and resources.

Outside emergency responders will be staged from near the main plant entrance (Gate #1) in building 4A parking lot or rear plant entrance near maintenance as an alternate (Gate #3). An employee shall be stationed at the gate to await the arrival of the outside responders and direct them to the locations within the initial staging area.

(H) Procedure for Establishing Work Zones

Site boundaries shall be established around an incident scene to control the potential for exposure as well as to prevent the spread of contamination from the site. The area where chemical contamination could occur (Exclusion Zone) along with the contaminated area shall be separated from the contamination free area (Support Zone) by a Contamination Reduction Zone. Entry and exit points should be conspicuously marked. Entry to the Contamination Reduction Zone from the Exclusion Zone should be separate from the entry from the Contamination Reduction Zone to the Exclusion Zone. The Safety Officer shall assist the Incident Commander in determining the boundaries of each work zone.

Decontamination facilities will be located in the Contamination Reduction Zone. Two separate contamination corridors are to be set up: one for personnel and one for heavy equipment, if needed. After passing through decontamination, air

monitoring for the contaminants must indicate a level very close to background readings before either people or equipment may exit into the Support Zone. Personnel shall don the appropriate level of PPE prior to entering the Contamination Reduction Zone. Personnel moving to the Support Zone from the Contamination Reduction Zone must remove decontaminated protective clothing in that zone.

Factors that must be considered when establishing boundaries for the three work zones include:

- Physical and topographical features of the site
- Weather conditions
- Explosion and fire potential
- Air monitoring
- Physical, chemical, and toxicological characteristics of contaminants
- Dimensions of contaminated areas
- Area needed to conduct operations
- Decontamination requirements
- Potential for exposure
- Points of site access

(I) Rotation of Emergency Response Personnel

If the Incident Commander suspects that the response and subsequent clean up shall exceed two hours, emergency response personnel shall be rotated. In the event that the Incident Commander in consultation with the Safety Officer determines that additional manpower is needed to relieve personnel, the Operations Manager shall make the necessary arrangements to bring in trained plant emergency responders. This may include members of the HazWoper Team and Medical Team. Production shall follow standard call-out procedure. At the beginning of any incidents it is strongly recommended to contact the Crosby Volunteer Fire Department in the event additional manpower and equipment is needed.

Plant Management shall ensure that the emergency response organization has the appropriate resources and supplies needed to actively continue the emergency response effort. This may include food and beverages for emergency response personnel, additional and back-up emergency equipment, and shelter facilities for response personnel, and facility information. Responders shall be rehabilitated in the Building 16 QC Laboratory First Aid Room, under the direction of the Medical Team and Harris County EMS.

(J) Contingency Plan

Immediately after a major business interruption, steps shall be taken to safely resume normal operations. Plant management shall assume the role of Recovery Team and make the necessary arrangements to resume business as usual. The first priority shall be the safety of facility employees. Qualified individuals for remaining hazards shall make an assessment. Employees

shall be briefed on the incident and results of the hazard assessment before returning to work. A more complete briefing shall be conducted upon conclusion of the incident investigation. Business resumption shall be accomplished according to the following guidelines:

1. Notification

Follow plant notification procedures. Notify insurance carriers and the appropriate government agencies. Determine what information needs to be obtained from the incident area before clean-up operations can begin. Damaged goods should be kept on hand until the investigation team or insurance adjuster has visited the premises.

2. Salvage Operations

Establish special job order numbers and charge codes for purchases and repair work. Take efforts to protect undamaged property. Protect equipment against moisture. Segregate damaged from undamaged property. Take an inventory of damaged goods. If items must be removed from the area, obtain a signed inventory of what was taken.

Broken glass, debris, or other materials with cutting edges should be gathered and disposed of immediately. Have appropriate solid/hazardous waste disposal containers available before salvage operations begin. Clean up of any remaining contamination is the responsibility of the Production Department. Clean-up activities and waste disposal shall follow applicable federal and state standards.

3. Restoration

Emergency equipment used in the incident response must be decontaminated and inspected before being returned to regular service. Inspect the condition of process equipment and piping. Water batching should be done before chemicals are introduced into the equipment.

III. COMMUNICATIONS and NOTIFICATIONS

(A) Emergency Activation

1. Initial Alert

An emergency situation is an event that has caused, or is likely to cause, injuries to people, a fire, or a chemical release or spill. The first person to become aware of an emergency shall activate the Emergency Response Plan by verbally contacting the shift supervisor (ext. 458), Security Gate (ext. 488) and/or the MPU unit control room (MPU ext 447). The 'first responder' may also initiate contact via radio. The individual shall contact their supervisor first if possible. If not possible, the shift Supervisor (Incident Commander) may be notified by the unit control room, or security officer. Whenever an actual or imminent danger exists, facility personnel will immediately be alerted using the plant emergency alarm, plant radio and/or a combination of all of the methods.

2. Portable Radios

The primary method of communication for emergency responders is by two-way radio. All portable two-way radios in the facility are certified as intrinsically safe. Channels are designed for each department or work area as listed in Table 2. Radios have been provided to the maintenance, shipping/receiving, production, wastewater treatment, technical, environmental, safety, and security departments. Radios will also be provided to the primary contacts for onsite contractors. All employees when working in the plant will carry portable radios.

Table 2: Plant Radio Channels

CHANNEL	ASSIGNED FOR
1	Emergency
2	Maintenance
3	WWT/HES
4	Logt/Admin
5	MPU

Channel 1 is the designated emergency channel. The Incident Commander and/or Safety Officer only use it during emergencies as deemed necessary. Channel 1 is monitored for emergencies, and is reserved primarily to allow a clear channel for such events. The Safety Engineer is responsible for the assignment, general upkeep and repair of plant radios.

Emergency Response leaders (Crosby Fire Chief, EMS) will be issued radios from Security upon their arrival into the plant. This will be their primary means of communication with the Incident Commander.

3. Plant Alarm and Communication Systems

The plant alarm is used to notify personnel of an emergency. Activation of the plant alarm system will be initiated from the Building 4 Administration building. Once activated, the alarm system will utilize a distinguishable siren and/or recorded voice to indicate:

1. Nature of the emergency situation
2. Immediate instructions to employees (i.e shelter in place and/or 'all clear)

To activate the plant alarm, the first responder will notify the control room or security guard who will initiate the alarm from the control panel. A verbal alert may also be issued via the plant public announcing system by the security guard and/or HES Department. If the alarm is not functional then the primary method of communication is by two-way radio.

(B) Notifications and Contacts

4. If an incident requiring a Two-Call notification occurs the manager-in-charge will place two telephone calls as follows:

- To his/her supervisor
- To the corporate emergency notification number 1-610-698-6964

If upon calling the 2-call number, it is not answered, the following should be done:

- Wait 5 minutes and try to call the 2-call number one more time. **Do not leave a voice message on the emergency notification number.** Listen to the recorded message on the phone and write down all of the backup numbers given. (These numbers should already be listed in the site emergency response call list.)
- If it is still not picked up, call the backup numbers:
 - a) Kim Knotts (c) 270-703-3937
 - b) Jean Marie Cencetti (c) 215-272-1005
 - c) Christine Bergey (c) 215)313-2202
 - d) Call your site Point of Contact based on Incident Type

5. Community Notification

E-Merge Systems is an internet based emergency notification service that allows us to notify government agencies and response centers by submitting an online form. E-Merge is designed to reach plant employees/management, the North Channel LEPC (NCLEPC) and the Harris County Office of Emergency Management(HCOEM) (and potentially other agencies to be added in the future). The NCLEPC and HCOEM are responsible for contacting the community of the incident and how to respond (ie. Shelter in Place).

Production Supervisor/Incident Commander or designee will log-in to the E-Merge System website: www.incident-reporter.net

Login username is: firstname.lastname

Password: (given to those authorized)

Click on the link “TX New Incident” and complete as appropriate.

“**Community Awareness and Emergency Response**” (CAER) Line serves as a source of information about emergency response incidents at member facilities or off-site transportation incidents (such as a tanker truck, rail car, pipeline, or marine vessel) that may impact the community. It also acts as a central clearinghouse and referral source for inquiries about member facilities and other CAER Line Users. Public Callers who dial 281-476-2237 (CAER) - or who dial 281-476-2273 (CARE) -- will hear an interactive menu and be able to listen to messages provided by the plant.

Production Supervisor/Incident Commander or designee will need to call [1-866-545-9504](tel:1-866-545-9504), **User ID:** 9204 **PIN:** (given to those authorized)

There are two options on the CAER line: Press 1 for Emergency Message and Press 2 for General Message. After saving the message write down the message number the system creates. Then call the public CAER line number to confirm the message posted correctly.

Ideally a message should be placed on the CAER line in less than 15 minutes of the incident occurring at the plant.

The decision to upload information to E-Merge or the CAER line will be made by the Incident Commander, Plant Manager or HES Department.

Reasons to use Emerge and the CAER line:

- An incident at the plant has the potential or is affecting the air, land, or waterways outside the plant.
- The community can see, hear, or smell the affects of an incident within the plant or surrounding area (accident near plant property that looks like something might be happening at the plant with Emergency Response vehicles).

6. Information on Employees

The HES Manager and/or Plant Manager shall be responsible for contacting the family of any employee that is injured during an emergency. The families of employees should be discouraged from calling the facility during an emergency because excess phone traffic can hinder communications required for response and can unnecessarily occupy the Media/Communications Officer’s time.

7. Media Communications

In the event of an emergency, the Media/Communications Officer will make all decisions regarding interaction with the media. The goal is to handle

media communications surrounding any type of emergency quickly and authoritatively in a way that enables the company to retain the greatest measure of control. At the time the media arrives at the plant, the Media/Communications Officer shall be contacted. In anticipation of this responsibility, the Media/Communications Officer has received specific training on these interactions. In addition, Arkema Inc. Corporate personnel have prepared a Crisis Communications Manual that provides clear instructions on dealing with the media and examples of press statements.

The following items summarize the planning for media interaction during an emergency at the plant:

- The Media/Communications Officer will conduct all media interaction. Employees should direct all inquiries to the Media/Communications Officer.
- The Media/Communications Officer has prepared fact sheets covering general aspects of the facility and its products that should be used in an emergency.
- Until the Media/Communications Officer arrives on-site, employees shall answer only that someone is on the way that can address all questions.

The following are general guidelines, taken from the facility's Crisis Communications Manual, to assist the Media/Communications Officer in dealing with the media during an emergency situation.

- Think before you respond, but handle media inquiries as quickly as possible under the circumstances. Return phone calls promptly.
- Stick to the facts – don't guess or speculate about what happened or what might occur.
- Disclose key facts all at once if possible, even if the news is bad, rather than letting it leak out.
- Be courteous and helpful to reporters.
- Don't play favorites. Provide the same information to everyone at the same time, if possible.
- Don't flatly refuse information, especially by saying "No Comment." If you don't have the answer, offer to get back to the reporter later. If you can't answer, explain why.
- Don't release information on emergency victims until their families are notified.
- Document the information you disclose, and maintain a record of all calls.
- Provide the media with positive information, such as plant safety statistics, to emphasize the facility's overall excellent record.
- Keep control of press interviews.

- Anticipate likely questions such as what happened, who was involved, and why it happened.
- Monitor coverage and make an ongoing effort to correct serious errors in media reports.

8. Notification of Outside Emergency Assistance

The Incident Commander will obtain the resources to effectively respond to the emergency. The Incident Commander, or designee, shall contact the Crosby Fire Department and EMS for all emergencies (they can wait at the gate if and when it is deemed they are needed. It is better to have to them here then learn as the incident progresses that they are needed now and we have to wait for them to get here). Outside responders shall be staged from either the main plant entrance (Gate #1) or the rear plant entrance (Gate #3) depending on the location of the emergency. The person contacting an outside source for assistance should be prepared to state the nature of the emergency, how much “help” is needed, as much detail of the incident as possible, which gate responders must report to and from what direction, and what precautions responders must take (such as wearing personal protective equipment).

9. Notification of Governmental Agencies

In situations where oils, chemicals, or wastes are discharged, regulatory agencies must be notified. Reporting requirements depend on the material, the quantity, the location of any discharge and whether or not any released substances have off-site impact. The **HES Manager and/or Environmental Officer** will make the decision to notify the necessary government agencies.

Documentation

When an incident occurs, the information listed below may be needed for a verbal report to governmental regulatory agencies.

- Name of the person making the report;
- Address and phone number of the facility;
- Time and date of the incident;
- Extent of any injuries;
- Chemical name of material involved;
- Exact location of the incident, including the name of any waters involved or threatened, and/or other medium or media affected by the release or spill;
- Source and quantity of any chemical released;
- Possible hazards to human health and the environment outside the facility;
- Person at the release location who is in charge of operations at the site and telephone number of that person;
- Corrective action taken or proposed to contain and clean-up any released or spilled material and any precautions taken to minimize impacts including evacuation;
- Extent of injuries, property damage, or possible hazards to public health, welfare, or the environment, if any; and
- Identity of governmental and/or private sector representatives

10. Occupational Safety and Health Administration (OSHA) Notification

Within 8 hours after the death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work related incident, the Safety Engineer (HES Manager as alternate) shall orally report the fatality/multiple hospitalizations by telephone or in person to the OSHA Area Office or by using the OSHA toll free central telephone number 1-800-321-OSHA(6742). This requirement applies to fatalities and hospitalizations that occur within thirty (30) days of the work related incident. The telephone number, physical address, and fax number of the Houston North Area OSHA Office and the Region 6 OSHA Office are given in Table 3.

Each report shall related the following information:

- Company Name
- Location of Incident
- Time of Incident
- Number of Fatalities or Hospitalized Employees
- Facility Contact Person
- Contact Phone Number
- Brief Description of the Incident

11. Facility and Corporate Notifications (non-business hours)

In accordance with the Arkema Inc. Crisis Communications Plan, use Send Word Now (2-call system). More information regarding the facility's crisis communications procedure can be found in the Crisis Communications Manual.

12. Emergency Response Outside Contacts List

Emergency contact lists have been developed to assist responders. Table 3 lists contact information for the ambulance services, local medical facilities, local fire departments, local law enforcement, Local Emergency Planning Committee (LEPC), spill response contractors and equipment services, regulatory agencies, utility companies, and service and rental companies.

Table 3: Emergency Response Outside Contacts

Community Alert Network	
Emerge Systems www.incident-reporter.net Username: firstname.lastname Password: lastname (unless changed by user)	CAER Line (to record a msg) User Access Line: 866-545-9504. User ID: 9204 PIN: 1160 CAER Line (to listen) 281-476-2237
North Channel LEPC (same as OEM) 713-881-3300 <i>Report all major incidents/drills to LEPC</i> www.incident-reporter.net	

Ambulance	
Crosby Emergency Ambulance 5915 FM 2100 Crosby, TX 77532 911 or (281) 328-6810	Life Flight Air Ambulance 6411 Fannin Houston, TX 77002 (713) 704-4357
Medical Facilities	
San Jacinto Methodist Hospital 4401 Garth Road Baytown, TX 77521 Main (281)420-8600 ER (281) 420-8888	US Health Works 1309 Fairmont Pkwy LaPorte, TX 77571 (281) 470-0543
Fire Departments	
Crosby Volunteer Fire Department 911 or (281) 328-2300 Asst Chief (Russell White) (832) 330-2159	Baytown Fire Department (281) 422-3530
Law Enforcement	
Harris County Sheriff's Department Emergency-----911 Non-Emergency----- (713) 221-6000	Department of Public Safety (281) 424-3669
Other Information	
United Shutdown Safety, 629 Howard Ave., Deer Park TX 77536 (Air, Safety Supplies/Equipment)	(877) 805-5155 (281) 241-1736
Texas Poison Center	(800) 222-1222
Rocky Mountain Medical Assistance	(303) 739-1100
Chemtrec (will activate REACTS)	(800) 424-9300 (202) 483-7616
National Weather Service	(281) 337-5074
Rockwell Specialized Response (Air Monitoring)	(817)246-2438
Regulatory Agencies	
Texas Emergency Response Center (24 hours)	(800) 832-8224
Texas Commission on Environmental Quality (Region 12)	(713) 767-3500 Fax: (713) 767-3520
OSHA Houston North Area Office 690 S. Loop 336 W. Suite 400, Conroe, Texas 77304	(936) 760-3800 FAX: (281) 999-7457
OSHA Region VI Office Dallas, Texas	(972) 952-1330 Fax: (972) 952-1338

OSHA Toll-Free Central Telephone Number	1-800-321-OSHA (6742)
Environmental Protection Agency (Dallas Emergency Response – 24 hours)	1-866-372-7745
National Response Center (24 hours)	(800) 424-8802
Harris County Pollution Control Department	(713) 920-2831 Fax: (713) 477-8963
General Land Office	(800) 832-8224

Spill Response Contractors and Equipment

<i>Hydrocarbon or oil spills</i>	
Garner Environmental Service, Inc., 1717 W. 13 th Street, Deer Park	(281) 930-1200

Utility Companies

Barrow Oil Company	(281) 427-4000/4017
CenterPoint Energy (Electric)	(713) 207-8000
Customer Service	(713) 207-2222
ILCA Department Receptionist	(713) 207-3999
ILCA Assigned Representative	(713) 207-3512
CenterPoint Gas Control Call Center (24-hour)	(713) 654-0958
<i>Gas Control Manager – Greg Matejeic</i>	Office (713) 207-0517 Cell (713) 539-6375 Pager (713) 886-0405 Home (936) 788-2086
<i>Gas System Dispatching Manager – Don Johnson</i>	Office (713) 207-0518 Cell (713) 539-7445 Pager (713) 549-9478 Home (979) 798-1267
Verizon (Telephone)	(800) 483-1000

Service and Rental Companies

Stewart and Stevenson (Dan Hannah)	(713) 671-6172
Waukesha Pierce (Ken Waller)	(713) 723-1050
Cummins Southern Plains (Gaylin Odair)	(713) 956-0020
Aggreko (John Powers) Rental Only	(281) 485-4471

Loftin Equipment (Generators/FirePump Engine)	(281) 310-6858
FE Moran (Fire Service – Inspect/Repair/Service)	(281) 471-1967
Securitas (Security)	(832) 912-3240

IV. Emergency Response Procedures

(A) Major Chemical Spills or Releases

The primary concerns in the event of a major spill are:

- Protection of employees and people in neighboring communities;
- Stop, contain, and clean up the leak or spill; and
- Determine the extent and material involved in the leak or spill.

1. General Procedure and Responsibilities

Actions to control, contain, and clean up spills are to begin when a spill is observed. The person who discovers a spill or release will take initial actions to contain the spill and to halt any further spillage. The alert procedure shall be performed and the Incident Commander will be responsible for on-site control and clean-up efforts.

Releases to the atmosphere will be contained by closing valves, blocking lines, and/or sealing openings as needed. Processes will be shut down as needed to stop any atmospheric releases. The spread of the spill will be controlled by employing Emergency Response personnel at the facility to construct makeshift dikes of dirt and/or absorbent material (including granular absorbent, spill pads, spill pigs). Air monitoring will be conducted as necessary to evaluate the environment and determine chemical concentrations.

Storm water containment gates shall be closed. Clean-up of the area will continue by use of absorbent material, or other appropriate methods, until all of the spilled material has been removed. Spills within the area may be decontaminated, if necessary, using such methods as a high-pressure or detergent wash. If the spill escapes into adjacent waterways, control will be accomplished by deploying booms or by other methods that can contain or divert the material for collection. Depending on the nature and extent of the spill, the Incident Commander may decide to arrange for help from outside service contractors.

Criteria for General Reentry

Reentry is the entry of persons into an affected area following an incident. Emergency reentry refers to the temporary, short-term readmission of persons into a restricted area for the purpose of performing some essential task. General reentry refers to the unlimited use of previously restricted areas or objects after the hazards of an incident have been reduced to acceptable levels.

- Oxygen levels in normal range and atmosphere verified free of flammable gases and chemical/toxic agents

- Area must be well-illuminated and free of debris, water, dust, or liquid spills
- Wiring inspections have been completed to ensure that wiring and connections have not been damaged from the incident or response efforts
- Safety equipment, including fire systems and alarms, has been inspected by a qualified professional and placed back in regular service
- Hazardous materials normally kept in the area are safely contained and those used for clean-up have been removed from the area
- Utilities have been restored
- Heating, ventilation, and air conditioning systems have been cleaned and examined

The decision making process for reentry will be under the direction of the Incident Commander (Production Supervisor). All members of the PEO shall participate in the decision.

Reentry decisions should be made in a phased manner, such that restricted reentry occurs first. Once emergency reentry has been implemented, access to the area must be strictly controlled. First priority for access is resources needed to protect the health and safety of the emergency responders, such as air monitoring. After initial air monitoring, efforts shall be made to secure the boundaries of the hazard areas. Then recovery and clean-up operations may begin.

Areas known to be uncontaminated (identified when initial monitoring data defines zone boundaries) should be the first to be declared general reentry. Minimally contaminated areas would be declared general reentry in the second phase, after further monitoring has determined contaminant concentrations are at acceptable levels.

2. Hydrogen Peroxide

Characteristics and Health Hazards

Hydrogen peroxide is a clear, colorless liquid with a slightly pungent odor. Hydrogen peroxide is corrosive and may cause irritation of the eyes, skin, or respiratory tract, and may cause burns to the eyes and skin. It is also a strong oxidizer, which may release oxygen and promote the combustion of flammable material. Contact with heat, impurities, metals, alkalis, and reducing agents may promote decomposition and should be avoided.

Personal Protective Equipment

For initial response to hydrogen peroxide spills, a self-contained breathing apparatus (SCBA) must be worn in addition to nitrile or butyl rubber gloves, PVC boots, and an acid suit. After initial response, air monitoring must be performed by qualified personnel to determine level of respiratory protection

needed for clean up. Generally, for minor spills in well-ventilated areas no respiratory protection is needed. However, nitrile or butyl rubber gloves, PVC boots, and acid suit must still be worn. When the determination is made that an SCBA is not necessary, goggles and face shield must be worn in its place.

Procedure

To control, contain, and clean-up a hydrogen peroxide spill, the following precautions must be taken by emergency responders:

- Initiate the alert procedure by contacting the Incident Commander (IC).
- Report to staging area as directed by the IC.
- Keep combustibles away from spilled material.
- Eliminate the source of the spill. This may be done by closing valves, blocking lines, and/or sealing openings as needed.
- Prevent spread of the spill by employing dikes, where necessary.
- Conduct air monitoring to evaluate the environment and determine chemical concentrations.
- Contact the HES Department for disposal information.
- Flood spill area with large amounts of water, under the direction of the HES Department.
- Estimate the amount of hydrogen peroxide involved and report the information to the HES Department.

3. Acid Chloride

Characteristics and Health Hazards

Acid chlorides are generally clear to slightly colored liquids with penetrating acid odors. Acid chlorides are corrosive and may cause burns to the eyes, skin, and digestive tract. Acid chlorides must be kept away from heat, flames, and ignition sources. Contact with, water, strong oxidizers, strong acids, strong alkalis, alcohols, and amines will promote rapid decomposition and must also be avoided. Hydrogen chloride is a decomposition product.

Personal Protective Equipment

For initial response to acid chloride spills, a self-contained breathing apparatus (SCBA) must be worn in addition to butyl rubber gloves, PVC boots, and acid suit. After initial response, air monitoring must be performed by qualified personnel to determine the level of respiratory protection needed for clean up. Generally, for most spills, a full-face respirator with organic vapor/acid gas cartridges must be worn. A neoprene apron may be substituted for the acid suit when performing clean up of a small spill.

Procedure

To control, contain, and clean-up an acid chloride spill, the following precautions must be taken by emergency responders:

- Initiate the alert procedure by contacting the Incident Commander.

- Report to staging area as directed by the IC.
- Shut off all ignition sources in the area. All equipment used when handling the material must be grounded.
- Keep combustible materials away from the spill.
- Eliminate the source of the spill. This may be done by closing valves, blocking lines, and/or sealing openings as needed.
- Prevent spread of the spill by employing dikes, where necessary.
- Conduct air monitoring to evaluate the environment and determine chemical concentrations.
- Absorb and neutralize spill with soda ash.
- Once the spill has been neutralized, the HES Department will determine if the neutralized mass will be sent to the plant's wastewater treatment unit or off-site for disposal.

4. Sulfuric Acid

Characteristics and Health Hazards

Sulfuric acid is a colorless and odorless oily liquid. Sulfuric acid is corrosive and may cause severe burns to the eyes, skin, respiratory tract, and digestive tract. It is highly reactive and is capable of igniting a combustible material on contact. The reaction of sulfuric acid with water will generate heat, and copious amounts of water must be used to dilute the acid. Contact with halogens, bases, metals, nitrogen compounds, and reducing agents may promote decomposition and should also be avoided.

Personal Protective Equipment

For initial response to sulfuric acid spills, a self-contained breathing apparatus (SCBA) must be worn in addition to butyl rubber gloves, PVC boots, and an acid suit. After initial response, air monitoring must be performed by qualified personnel to determine level of respiratory protection needed for clean up. Generally, for minor spills in well-ventilated areas no respiratory protection is needed. However, for clean up in unventilated areas a full-face respirator with organic vapor/acid gas cartridges must be worn. Butyl rubber gloves, PVC boots, and acid suit must be worn regardless of respiratory protection needed. When the determination is made that a respirator is not necessary, goggles and face shield must be worn in its place.

Procedure

To control, contain, and clean-up a sulfuric acid spill, the following precautions must be taken by emergency responders:

- Initiate the alert procedure by contacting the Incident Commander.
- Report to staging area as directed by the IC.
- Eliminate all ignition sources.
- Eliminate the source of the spill. This may be done by closing valves, blocking lines, and/or sealing openings as needed.
- Prevent spread of the spill by employing dikes, where necessary.
- Conduct air monitoring to evaluate the environment and determine chemical concentrations.

- Neutralize spill with soda ash. Exercise caution during neutralization as heat may be generated.
- Contact the HES Department for disposal information.
- Estimate the amount of sulfuric acid involved and report the information to the HES Department.

5. Organic Peroxide

Characteristics and Health Hazards

Organic peroxides may be corrosive to the eyes and skin and irritating to the respiratory tract. Organic peroxides may be highly reactive materials. Contact with incompatible materials or exposure to temperatures exceeding the self-accelerating decomposition temperature may result in a self-accelerating decomposition reaction with release of flammable vapors, which may auto ignite. Some organic peroxides require refrigerated storage to maintain stability. Contact with oxidizers, reducing agents, acids and bases must be avoided.

Personal Protective Equipment

For initial response to organic peroxide spills, a self-contained breathing apparatus (SCBA) must be worn in addition to nitrile rubber gloves, PVC boots, and a neoprene apron. After initial response, air monitoring must be performed by qualified personnel to determine the level of respiratory protection needed for clean up. Generally, for minor spills in well-ventilated areas no respiratory protection is needed. However, for clean up in unventilated areas a full-face respirator with organic vapor/acid gas cartridges must be worn. Nitrile or neoprene rubber gloves must be worn regardless of respiratory protection needed. When the determination is made that a respirator is not necessary, goggles must be worn in its place.

Procedure

To control, contain, and clean-up an organic peroxide spill, the following precautions must be taken by emergency responders:

- Initiate the alert procedure by contacting the Incident Commander.
- Report to staging area as directed by the IC.
- Eliminate all ignition sources.
- Eliminate the source of the spill. This may be done by closing valves, blocking lines, and/or sealing openings as needed.
- Prevent spread of the spill by employing dikes or spill booms, where necessary. Absorbent pads may be sufficient for small package spills.
- Conduct air monitoring to evaluate the environment and determine chemical concentrations.
- Absorb spill with loose absorbent or absorbent pads. Dampen the mixture with water.
- Use non-sparking tools to sweep up mixture and place in polyethylene bag. Bag and sweepings should be wetted down further.
- Contact the HES Department for disposal information. Estimate the amount of organic peroxides involved.

- Wash down area with water after absorbent mixture has been removed. Allow for sufficient ventilation. Runoff should be collected and sent to wastewater treatment.

6. Sulfur Dioxide

Characteristics and Health Hazards

Sulfur dioxide is non-flammable colorless liquid under pressure and has a sharp pungent odor. At ambient temperatures and atmospheric pressures sulfur dioxide is a colorless gas. It is a severe eye, skin, and respiratory irritant and may be toxic at low concentrations. The odor threshold for sulfur dioxide is well below the toxic concentration level. However, the strength of the odor should not be considered a means to identify whether or not sulfur dioxide is present at toxic levels. Sulfur dioxide has the ability to cause olfactory fatigue. You will not be able to smell the sulfur dioxide after the first few times you inhale. If you first smell the odor then it disappears, that does not necessarily mean the sulfur dioxide has dissipated.

Inhalation: Vapors are extremely irritating to the throat, mucous membranes and upper respiratory tract. Short exposures to concentrations as low as 1 ppm may produce a reversible decrease in lung function. Concentrations as low as 5 ppm have produced constriction of the bronchiole tubes. Severe exposure may result in pulmonary edema, permanent lung injury or death. The effects of pulmonary edema which include coughing and shortness of breath may be delayed for hours or days after exposure.

Skin Contact: Liquid SO₂ can cause frostbite and skin burns. SO₂ converts to sulfurous acid in moist environments, which may cause skin irritation.

Eye Contact: Mildly irritating low concentrations of 5.4ppm Moderate to sever irritation of 8 ppm. Liquid SO₂ can burn the eye and permanently affect vision.

Personal Protective Equipment

For initial response to a sulfur dioxide release, a self-contained breathing apparatus (SCBA) must be worn in addition to butyl rubber gloves and acid suit. After initial response, air monitoring must be performed by qualified personnel to determine the level of respiratory protection needed for clean up. A full-face respirator with organic vapor/acid gas cartridges may be worn at lower concentrations. A neoprene apron may be substituted for the acid suit when performing clean up and decontamination.

First Aid Measures

If anyone is exposed to Sulfur Dioxide, call 911 for outside emergency medical assistance. Exposed individuals should receive initial first aid from trained medical team members as described below:

Inhalation: Remove from area to fresh air. Give artificial respiration ONLY if breathing has stopped. Do not use mouth-to-mouth method if victim inhaled the substance; use the aid of a pocket mask equipped with a one way valve or equivalent. Give CPR only if there is no pulse and no breathing. Oxygen may be beneficial and should be administered by trained personnel.

Skin Contact: Flush skin with running water for a minimum of 20 minutes. Start flushing while removing contaminated clothing. Repeat flushing if irritation persists. Treat frostbite by immediately immersing affected area in warm water until skin has warmed up and turned pink.

Eye Contact: Immediately flush with lukewarm running water for a minimum of 5 minutes for gas or 20 minutes for liquid exposure. Hold eyelids open during flushing. Repeat flushing if irritation persists.

Ingestion: Ingestion is not an applicable route of exposure

Effects of contact or inhalation may be delayed. Oxygen may be beneficial.

Emergency Response Procedure

To control and mitigate a sulfur dioxide release, the following precautions must be taken by emergency responders:

- Initiate the alert procedure by contacting the Incident Commander.
- Report to staging area as directed by the IC.
- Eliminate the source of the release.
 1. PRIMARY: Stop the flow of sulfur dioxide by activating the emergency button in the MPU Control Room to close the tank valves.
 2. SECONDARY: Activate the emergency shutoff buttons in the CPU tank farm area to close the SO₂ storage tank valves on the sulfur dioxide storage tank, in the event the flow of sulfur dioxide cannot be stopped from the control room.
 3. BACK UP: Manually close valves in the sulfur dioxide storage tank's piping to stop the leak, in the event the emergency shutoff valves in the tank farm do not stop the flow of sulfur dioxide.
- Apply water spray directly to vapor cloud to scrub the sulfur dioxide vapors. Water will increase the corrosiveness of the vapors and may increase the size of the leak due to the corrosiveness, so caution must be taken in its use.
- Contain runoff water, as it contains sulfuric acid. Runoff can be sent to wastewater treatment as acidic material or neutralize runoff with soda ash.
- Conduct air monitoring to evaluate the environment and determine chemical concentrations. Work cannot be resumed in the area until vapors are determined to be below the threshold limit value of 2 ppm.
- Estimate the amount of sulfur dioxide involved and the amount of runoff water and report it to the HES Department.

In the event of a large release of Sulfur Dioxide gas tight suits are required in extreme (>1000 ppm) concentrations. Evacuate residents who are down wind of a release or fire. Prevent unauthorized entry in the effect area. If possible cover leak area with tarpaulin or plastic sheet to limit spread of sulfur dioxide.

7. Isobutylene (2-methyl propene)

Characteristics and Health Hazards

Isobutylene exists as an odorless and colorless flammable gas that is heavier than air. It is stored on site as a liquefied compressed gas. An isobutylene leak has the potential to ignite. If the release does not immediately ignite, it has the potential to accumulate in the immediate atmosphere and ignite, causing an unconfined vapor cloud explosion. An isobutylene release may also undergo auto-refrigeration, which can cause frostbite if personnel are exposed.

Isobutylene is an asphyxiant. If inhaled in large concentrations, isobutylene can displace oxygen in the bloodstream and cause drowsiness or dizziness.

Personal Protective Equipment

For initial response to an isobutylene release, a self-contained breathing apparatus (SCBA) must be worn in addition to butyl rubber gloves, PVC boots, and a neoprene apron. After initial response, air monitoring must be performed by qualified personnel to determine the level of respiratory protection needed for clean up. Generally, for minor spills in well-ventilated areas no respiratory protection is needed. However, for clean up in unventilated areas a full-face respirator with organic vapor/acid gas cartridges must be worn. Butyl rubber gloves must be worn regardless of respiratory protection needed. When the determination is made that a respirator is not necessary, goggles must be worn in its place.

Inhalation: Signs of eye, throat, and respiratory tract irritation (cough and difficulty breathing), CNS depression (fatigue, dizziness, headache, collapse, coma and death) and possible cardiac sensitization may occur after exposure to high vapor concentrations.

Skin Contact: May cause frostbite or freeze burns. No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure.

Eye Contact: Direct contact with liquified gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation.

First Aid Measures

If anyone is exposed to Isobutylene, call 911 for outside emergency medical assistance. Exposed individuals should receive initial first aid from trained medical team members as described below:

Inhalation: Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. When breathing is difficult, properly trained personnel may assist the affected person by administering

oxygen. Keep the affected person warm and at rest. Get medical attention immediately.

Skin Contact: If frostbite has occurred, seek medical attention immediately; do not rub the affected area or flush with water. To prevent further damage, do not attempt to remove frozen clothing from affected area. If frostbite has not occurred, immediately and thoroughly wash contaminated skin with soap and water.

Eye Contact: If eye tissue is frozen, seek medical attention immediately. If tissue is not frozen, thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists seek medical attention.

Emergency Response Procedure

To control and mitigate a release of isobutylene, the following precautions must be taken by emergency responders:

- Initiate the alert procedure by contacting the Incident Commander.
- Report to staging area as directed by the IC.
- Eliminate all ignition sources.
- Eliminate the source of the leak.
 1. PRIMARY: Activate the emergency button in the MPU Control Room. The emergency shutoff valves located on the tank's piping will be closed and the flow of isobutylene will be stopped.
 2. SECONDARY: Activate the emergency shutoff buttons located in the MPU tank farm area to close the emergency shutoff valves on the isobutylene tank in the event the flow cannot be stopped from the control room.
 3. BACK UP: Manually close the emergency shut-off valves in the event the emergency shut-off buttons cannot isolate the leak. If the leak is not burning and is sufficient to cause a vapor cloud explosion, personnel should not enter the area. A rule of thumb is that a release of approximately 10,000 pounds is required for this type of explosion.
- Use water fog to remove vapors and prevent an explosion hazard. If ignition of vapors has occurred, allow fire to burn and use water spray to cool adjacent tanks. Do not use a water spray to extinguish a fire at the release point since this may result in the accumulation of unburned isobutylene.
- Conduct air monitoring to evaluate the environment and determine LEL concentrations once the leak has been stopped.
- Collect any water runoff from the area and sample to ensure it is acceptable to send to the well.
- Estimate the amount of isobutylene involved and the amount of runoff water and report it to the HES Department.

(B) Fires

The primary concerns in the event of a major fire are:

- Primary objective is the protection of employees and people in the neighboring community;
- Determination of the severity of and materials and equipment involved in the fire; and
- Extinguishing and containing the fire.

- Organic Peroxide fires must be contained first then extinguished if possible.
- Be alert for water runoff containing flammable chemicals.
- Disconnect electrical power to affected area(s) only.
- Keep surrounding tanks and equipment cool with water.

1. General Procedures

The fire brigade will respond to all fires however the fire brigade only fights fires from outside the structure. The current fire brigade is not trained to conduct internal structural fire fighting. If the nature and extent of a fire requires assistance from local fire departments, they will be contacted

At the instruction of the Operations Officer or Incident Commander, the fire brigade members shall perform the following:

- Don fire bunker gear with available SCBA's and report to staging area designated by the IC from a crosswind direction.
- Assist Incident Commander in assessing the severity and the materials and equipment involved in the fire.

The Operations Officer will set up:

1. Exclusion Zone – at close proximity of affected area
2. Contamination Reduction Zone - locations for staging area
3. Support Zone – all stand-by personnel

Follow priorities for control:

1. Rely on area sprinklers
2. Rely on area fire monitors
3. Use of hose lines, portable monitors, etc.

Criteria for General Reentry

Reentry is the entry of persons into an affected area following an incident. Emergency reentry refers to the temporary, short-term readmission of persons into a restricted area for the purpose of performing some essential task. General reentry refers to the unlimited use of previously restricted areas or objects after the hazards of an incident have been reduced to acceptable levels.

- Oxygen levels in normal range and atmosphere verified free of flammable gases and chemical/toxic agents
- Area must be well-illuminated and free of debris, water, dust, or liquid spills
- Wiring inspections have been completed to ensure that wiring and connections have not been damaged from the incident or response efforts

- Safety equipment, including fire systems and alarms, has been inspected by a qualified professional and placed back in regular service
- Hazardous materials normally kept in the area are safely contained and those used for clean-up have been removed from the area
- Utilities have been restored
- Heating, ventilation, and air conditioning systems have been cleaned and examined

The decision making process for reentry will be under the direction of the Incident Commander. All members of the Plant Emergency Organization (PEO) shall participate in the decision. The building or area of concern must immediately be secured. Utilities to the area must be shut-off. Emergency reentry of the Incident Commander and members of the emergency response organization shall be permitted to conduct an inspection of the integrity of the scene and evaluate the need for a thorough structural inspection. Before other personnel are allowed into the area, it must be verified that wall and ceiling materials, cracked windows and outside building materials are not in danger of falling onto employees. Electrical systems and telecommunications equipment should be checked to ensure they are still in good operating condition and that there is no danger of exposure to electricity. Special attention should be paid to wiring and connections that could potentially short out from water damage. Once the scene is stable, limited clean-up operations may begin. Decontamination procedures, where applicable, must be followed.

2. **Hydrogen Peroxide**

Characteristics and Health Hazards

Hydrogen peroxide is a clear, colorless liquid with a slightly pungent odor. Hydrogen peroxide is corrosive and may cause irritation of the eyes, skin, or respiratory tract, and may cause burns to the eyes and skin. It is also a strong oxidizer, which may release oxygen and promote the combustion of flammable material. Contact with heat, impurities, metals, alkalis, and reducing agents may promote decomposition and fire.

Personal Protective Equipment

For initial response to an hydrogen peroxide fire, a self-contained breathing apparatus (SCBA) must be worn in addition to full bunker gear.

Refer to the Major Spills and Release section for Hydrogen Peroxide for additional information and first aid measures.

Procedure

USE PLENTY OF WATER. On decomposition Hydrogen Peroxide releases oxygen which may intensify fire. Any tank or container surrounded by fire should be flooded with water for cooling.

3. Acid Chlorides

Characteristics and Health Hazards

Acid chlorides are generally clear to slightly colored liquids with penetrating acrid odors. Acid chlorides are corrosive and may cause burns to the eyes, skin, and digestive tract. Acid chlorides must be kept away from heat, flames, and ignition sources. Contact with, water, strong oxidizers, strong acids, strong alkalis, alcohols, and amines will promote rapid decomposition and must also be avoided. Hydrogen chloride is a decomposition product.

Personal Protective Equipment

For initial response to an acid chloride fire, a self-contained breathing apparatus (SCBA) must be worn in addition to full bunker gear.

Refer to the Major Spills and Release section for Acid Chlorides for additional information and first aid measures.

Procedure

DO NOT USE WATER. Acid Chlorides hydrolyzes exothermically in water, liberating hydrogen chloride vapors. Use dry chemical powder, Carbon dioxide (CO₂), or Foam. In a fire or if heated, a pressure increase will occur and the container may burst. Acid Chlorides emit toxic fumes under fire conditions. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. Contact with water liberates toxic gas. Decomposition products may include the following materials: carbon oxides, Hydrogen chloride (HCl), Phosgene gas.

Promptly isolate the scene by removing all persons from the vicinity of the fire and wind direction. Only use water spray to keep fire-exposed containers cool. Contain contaminated fire-fighting water run-off.

4. Organic Peroxide

Organic peroxides are generally highly reactive materials. Contact with incompatible materials or exposure to temperatures exceeding the self-accelerating decomposition temperature may result in a self-accelerating decomposition reaction with release of flammable vapors, which may auto-ignite.

Firefighting Guidelines

Certain precautions should be taken when fighting an organic peroxide fire.

- Rely on area sprinklers and fire monitors as long as possible. For massive fires, withdraw from area and let burn.
- Evacuate immediate area of 80 to 160 feet in all directions
- Stay upwind of the fire at all times.

- If fire hoses must be used, contain the fire with large amounts of water from a safe distance. Use water spray or fog rather than a solid stream, as it may spread the fire.
- Move containers away from the fire area if you can do so without risk.
- Use water spray to cool surrounding materials, containers, and equipment exposed to fire.
- Use water spray to disperse any flammable mists and vapors that have not ignited.
- Monitor runoff water as it may create a fire or explosion hazard.
- Continue to keep water spray on surrounding materials, containers, and equipment until well after fire is out.

5. Isobutylene (2-methyl propene)

Characteristics and Health Hazards

Isobutylene releases extremely flammable vapors well below ambient temperatures. When exposed to ignition source in air, vapors can burn in open or explode if confined. Potential explosion hazard from reignition, if fire is put out without shutting off source. May travel long distances along the ground before igniting and flashing back to vapor source. Heat/contamination can release extremely flammable isobutylene gas. Metal corrosion may generate flammable hydrogen gas

Personal Protective Equipment

For initial response to an isobutylene fire, a self-contained breathing apparatus (SCBA) must be worn in addition to full bunker gear.

Refer to the Major Spills and Release section for Isobutylene for additional information and first aid measures.

Emergency Response Procedure

Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

(C) Medical Emergency

The Medical Team reports to the staging area to access, treat, or stand-by for possible injuries. Available supervisory and medically qualified personnel shall assess any injuries. Treatment shall be provided according to the plant Medical Protocol. When there are no injuries for the Medical Team to treat, they remain on “stand-by”.

The procedure for the Medical Team is as follows:

- Report to the Staging Area and monitor the situation.
- Render aid to any injured personnel and arrange for the additional medical responders to render aid where needed.
- Alert other trained medical responders.
- Ensure that adequate first aid supplies are available.
- Have the Media/Communications Officer or Safety Officer call 911 for medical assistance when a serious or life-threatening injury occurs.
- Liaison with outside medical assistance.

Any responders that give aid to injured personnel shall protect themselves from contact with the body fluids of the injured persons. Latex gloves, rescue breathing mask, and other equipment are to be used to shield the responder from contact. If a body fluid exposure incident occurs while rendering first aid, the HES Manager shall be notified immediately.

(D) Disruption of Plant Utility Services

1. Electrical Services

The disruption of major plant electrical services may occur and require appropriate action from Shipping and Receiving Personnel. The product storage buildings have two backup generators that must be started manually. Liquid nitrogen is also available using the Emergency N2 Procedures and may be used for cooling on all of the low-temperature storage buildings.

Emergency generators and/or uninterrupted power supply are located at units BPU and MPU. The Emergency Generator at MPU will automatically start in the event of a disruption of power. The BPU Generator will have to be started manually in such an event. Power is supplied to critical instrumentation, agitators, pumps, and limited lighting. The Maintenance Department shall notify the utility company about the disruption of power as appropriate.

In addition, emergency procedures for the individual processes are available in the Hazard Analysis Process Emergencies section of the Technical operating procedures. These operating procedures include the appropriate actions to take in the event of a power failure. Operating procedures for each unit are located in the control room of that unit and on the plant Intranet Site.

The power failure checklists given in Table 4 indicate the necessary equipment to be restarted after a power failure of short or long duration. All other equipment in may be restarted as necessary.

Table 4: Power Failure List

MPU EQUIPMENT	
30-K-1 Air Compressor	
30-R-1 (M-1 and M-2) Brine Compressor	
30-HU-1 Molten Diol Heater	
30-HU-1 Glycol Pump	
34-B-1 MPU Boiler	
43-FS-1, Thermal Oxidizer Scrubber	
30-FS-95 Acid Fumes Scrubber	
43-TO-1 MPU Thermal Oxidizer	
28-K-1 Air Compressor	
WWT EQUIPMENT	
14-A-2A Agitator	P89A or B (Injection Pumps)
14-A-2B Agitator	A86 F-87 Feed Tank
14-A-8A Agitator	14-A-20 2A-Sump Agitator
14-A-8B Agitator	P-82 Spent Acid Pump
14-A-11A Agitator	M-91 (Filter Aid Tank) Mixer
14-A-11B Agitator	14-P-25 Flush Line Pump
P-91 Filter Aid Pump	14-FS-16 WWT Fume Scrubber
P-86 F-87 Feed Pump	44-TO-1 BPU/CPU Thermal Oxidizer

2. Natural Gas Service

Contact information for the 24-hour gas service hotline is given in Table 3. In the event of a loss of natural gas service or any operational problems (low pressure) with the gas service, this number should be called.

(E) Weather Related Emergencies

Southeast Texas is subject to severe weather conditions such as:

- Lightning
- Flooding
- Tornados
- Hurricane – see *Hurricane Preparedness Plan (SAFP7094)*
- Winter Storm

This procedure deals primarily with preparatory action and the safety of individuals during severe weather.

1. Lightning

To assure the safety of individuals during thunder storms, all employees, visitors, and outside service personnel shall remain off elevated unenclosed areas until the storm passes.

During times when severe weather is forecasted, monitoring of the weather will be conducted and when there is lightning within 15 miles of the site, a notification will be made to the plant. This will allow time to prepare to stop work if necessary.

At 10 miles, a notification will be made to stop all work on/in structures as well as any crane work.

At 6 miles, a notification will be made for workers to stop work and seek indoor shelter.

Outside work during a lightning event should be minimized and, if possible, limited to items required to prevent a safety or environmental incident.

Work activity will resume as the storm moves away and the closest lightning strike within the last 30 minutes is at least 6 miles out.

2. Flooding and High Water

Care shall be taken to be sure water is kept out of equipment, shops, control rooms, offices, etc. These areas are to be checked during severe rainstorms to prevent damage or personal injuries. Non-essential personnel are to be released when appropriate.

The following items must be checked during heavy rains:

- Monitor levels in all secondary tank containments.
- Open storm water containment gates as needed.
- Secure all containers and equipment as necessary.
- Monitor levels in sanitary sumps.

3. Tornado

Responsibilities

The Incident Commander shall designate a primary and back-up Weather Monitor to monitor severe weather conditions as necessary. Information can be obtained by calling the National Weather Service at (713) 228-8703 for latest update. When a tornado is sighted, the Weather Monitor shall immediately notify the Incident Commander, who shall initiate the response plan.

Tornado Watch: Weather conditions exist which could form a tornado. There is a good chance of tornado formation in the area or counties included in the watch. Tornado watches generally last 2 to 6 hours.

Tornado Warning: One or more tornados have been officially sighted and may strike in the vicinity of the warning. Warnings generally last 2 hours or less.

Response to a Tornado

In response to a tornado watch, personnel should be ready to seek shelter and take additional action should a warning be issued. If an approaching tornado is sighted, the following must be done:

The Incident Commander shall announce the condition via the Plant Public Address System or plant radio and all personnel in the plant will:

- Cease all material transfers and secure units and shipping activities.
- Evacuate all process structures.
- Seek shelter as fast as possible and avoid areas with windows. Seek shelter in the interior of Building #4, Building #16, or Building #29. If reaching a shelter area is not possible, move to ground level or rooms, hallways, or areas closest to the center of buildings. All office trailers should be evacuated, and those personnel should move to a more permanent shelter. If caught outdoors take a prone position in a ditch area, covering your head.
- Remain in shelter areas until the Incident Commander issues the “all clear”.

The Operations Officer is to account for all people and seek medical assistance, if needed, from the Medical Team.

4. Winter Weather

Introduction

Extreme cold can immobilize an entire region. The results can range from isolation due to blocked roads and downed power lines, to cars and trucks sliding on icy roads. Building roofs may be loaded beyond their design by accumulations of ice. Fire protection equipment may freeze, leaving a portion of the facility without protection. Unless proper precautions are taken, cold weather can cause problems.

Winter Weather Advisory: Winter weather conditions are expected to cause significant inconveniences and may be hazardous, especially to motorists

Frost/Freeze Warning: Below freezing temperatures are expected and may cause damage to plant water lines and pipes

Responsibilities

Plant personnel shall monitor severe weather conditions as necessary. Information can be obtained by calling the National Weather Service at (713) 228-8703 for the latest update.

During and after the approach of a winter storm, employees shall report for work as scheduled, unless weather conditions make it impractical or advised otherwise.

Response to Winter Weather

For cold weather, wear several layers of loose-fitting, lightweight, warm clothing rather than one layer of heavy clothing. Outer garments should be tightly woven and water-repellent. Wear a cold-weather hat. Insulated work coveralls are provided to Operations and Maintenance personnel. Remove layers as necessary to avoid overheating, perspiration, and subsequent chill. Change wet clothing frequently to prevent a loss of body heat.

Prior to cold weather, the following precautions should be taken:

- Examine the entire heating system to determine if the system is in proper operating condition and to correct any deficiencies. Clean all burners, boilers, and flues and remove any obstructions from pipes, radiators, and unit heaters.
- Maintain an adequate reserve supply of fuel.
- Verify all heat tracing is operational
- Plans should be made to promptly clear ice from access ways, control valves, hydrants, hose cabinets, smoke and heat vents, explosion relief vents, and other essential equipment. Have rock salt on hand to melt ice on walkways and kitty litter to generate temporary traction.
- Temperatures above 32° F must be maintained at all times in buildings equipped with wet pipe sprinkler systems; in all dry pipe, pre-action, and deluge valve closets; and in all pump houses.
- All wet standpipe systems with piping located in areas subject to freezing should be shut off, drained, and tagged.
- Solutions in all wet-pipe sprinkler systems should be tested and anti-freeze added as necessary.
- Hydrants and fire pump hose headers should be drained. Outlet hose valves must be left half open to prevent damage from freezing.
- Hose should be properly drained and dried.
- Packing on post indicator valves should not be leaking.
- Sections of exposed piping should be drained or otherwise protected against freezing. Wrap pipes in insulation and let faucets drip a little to avoid freezing.
- Safety showers and emergency eyewashes should be left on so that a steady drip is produced.
- Someone is kept on premises at all times to monitor for signs of impending trouble.

- Planned heat tracing and insulation repairs have been made. Heat tracing has been added to process and protective system piping that may freeze.

After the Freeze

Report downed power lines and broken gas lines immediately. Check to see that no physical damage has occurred and that water pipes are functioning. If pipes are broken, notify Maintenance personnel. Take precaution to inspect for frozen pipes that may have broken, frozen pipes may not begin leaking until after lines begin to thaw.

5. Reentry Guidelines for Severe Weather

Severe weather procedures shall be followed in the moments immediately following the incident. The Incident Commander shall contact essential personnel as needed for recovery operations. All other plant personnel shall be notified by plant management as to when they may return to the facility. General reentry criteria must be met.

(F) Security Threats

For a complete guide to handling all security issues, refer to the Crosby Site Security Plan (SAFP7042).

1. Bomb Threats

The Plant Manager should be notified immediately. The affected area will be evacuated and a headcount performed. If a suspicious package is located, the Harris County Bomb Disposal Unit will be notified by calling 911 or the Harris County Sheriff's Office at (713) 455-8050.

a) Preventive Measures

Security controls access and random inspections are performed on all employee vehicles entering and exiting the plant. Inspections are performed on every contract vehicle and truck driver entering and exiting the facility

Security personnel are trained annually on the bomb threat procedure. A copy of the Bomb Threat Log Sheet is posted and readily available at the Security Building.

b) Handling the Bomb Threat

If a threatening call is received:

- Keep the caller on the line as long as possible. If possible, the "Bomb Threat Log Sheet" in Appendix A will be completed during the conversation with the caller.

- Ask the caller for the location of the bomb and the time of possible detonation.
- Inform the caller that the building is occupied, and the detonation of a bomb could result in death or serious injury to many innocent people.
- Pay particular attention to peculiar background noises such as motors running, music, and any noise that may give a clue as to the location of the caller.
- Listen closely to the voice (male or female), voice quality (calm, excited), accents, unique phrasing, and speech impediments. Does the voice immediately remind you of a certain individual? If so, list that.
- Report the call and gathered information immediately to the Plant Manager, the Safety Engineer and/or HES Manager. They will determine what actions need to be taken.

Written Threats

Save all materials, including any envelope or container. Once the message has been recognized as a threat, further handling of the item should be avoided. Every possible effort must be made to retain evidence such as fingerprints, handwriting or typing, paper, and postal marks. Report the threat immediately to the Plant Manager, Safety Engineer and/or HES Manager, or Shift Supervisor. They will determine what actions need to be taken.

Threat Analysis

A determination shall be made as to the credibility of the threat by the Plant Manager and Incident Commander. This analysis shall be made with the close direction and assistance of the appropriate law agencies. Issues to consider include time of day and day of the week, mode of threat, specificity of threat, identity of caller, and potential for access to place alleged explosive device.

Credible threats usually contain positive target identifications. This would include time of detonation, a specific target to be destroyed, details on the bomb's construction, and the bomb's location.

Threat Response

Essentially, the appropriate response to the threat may be to

- Ignore the warning
- Conduct limited search of specified area
- Conduct general search of facility
- Order limited evacuation of particular area
- Order general evacuation

All bomb threats should be taken seriously. However, experience has shown that most anonymous threats are a hoax intended to create an atmosphere of anxiety and panic in order to interrupt normal activities. Absent positive target identification indicators or other credible information, an evacuation may not be considered appropriate.

Do not evacuate?	This may be an appropriate response if there have been a number of recent, publicized hoax bomb threats in the
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	area; if the caller seemed to be drunk; if the caller was a young child, or if it is a beautiful Friday afternoon about an hour before quitting time. This is especially true when no positive target identifications were provided during the phone call.
Conduct a limited or general search of the facility?	Searches are usually the most appropriate choice and should generally be the chosen response, especially if no positive target identifications or only one positive target identification was given in the threat.
Order limited evacuation, general evacuation, or move to a safe haven?	Evacuations are usually ordered only when the call is judged to be serious, the threat credible, there is insufficient time to conduct a thorough search, and the judgment is made that employees will be at less risk evacuating or moving to a safe haven than remaining in place and seeking cover. If two or more positive target identifications are given in the bomb threat, an evacuation may be in order.

c) Searches

The decision to search for a possible bomb should be carefully made with the close supervision and support of plant management and appropriate operations personnel when it is determined a search can be made safely. Such a decision may be made when there is some possibility of the actual placement of an explosive device and when there is reason to believe that it will not explode soon.

The search team shall be composed of volunteers who are familiar with the search area. Specific search areas shall be assigned to each search team member. The Incident Commander and/or Safety Engineer and/or HES Manager shall coordinate the search from a central location to allow for easy reporting back from the searchers.

The searchers shall look for:

- Threatening labeling such as “danger” or “explosive”
- An item that fits the threat description
- An item that appears to be “out of place” or unrecognized
- An object making strange noises

Specific areas to search include:

- Near entrances (inside and outside of doors)
- Near exits
- Around and in waste receptacles
- In restrooms, store rooms, closets, hallways, and nearby vehicles

Above all, search team members should not touch suspect items. These should be immediately reported to the Incident Commander and law enforcement officials.

No Bomb Found

If no bomb or suspicious object is found, the Plant Manager shall advise employees and local authorities and return the plant to normal operations.

Suspicious Object Found

If a suspicious object is found, the Incident Commander and the Plant Manager should:

- Stress again to personnel not to touch or move the object.
- Evacuate personnel from the surrounding area (if not already done).
- Prevent reentry of the evacuated area.
- Call 911 to activate the Harris County Bomb Squad, who will deactivate and remove the object.
- After the object is removed, finish searching to ensure that no other bombs have been placed.

Bomb Explosion

If there is a bomb explosion, the ERP will be activated and the Plant Manager and Incident must take the following steps:

- Determine if there are any injuries and attend to them immediately.
- Evacuate the surrounding area.
- Ensure no one goes near the scene of the explosion except to remove the injured.
- Control access to the area as other bombs may have been set to detonate at intervals.
- Advise police who will take charge of the situation.
- Initiate additional emergency procedures if fire fighting or medical response becomes necessary.

2. Civil Disorder Plan

The term Civil Disorder can be applied to any situation that involves disorderly conduct by one or more individuals. It is doubtful that this will be encountered while working within this facility, but some basic guidelines are provided below to safeguard persons and property in the event of an incident.

The information that follows provides steps that can be taken to reduce risk to employees in the event of a civil disturbance.

- Notify Management and HES Department of the disturbance so that the proper authorities may be contacted.
- Remain within the buildings or facility. Do not antagonize the demonstrators.
- Keep the front gate closed and ensure back gate is closed and locked.
- Do not become a spectator. Avoid contact. Do not provoke an incident. Leave the area of disturbance to avoid injury or possible arrest.
- Stay off the phone. Avoid unnecessary inquiries that tie up communications system.
- Do not attempt to gain entry to the facility if you are outside the gates. Withdraw from the area until it is safe to enter. Contact your supervisor to let them know you are safe.

- If a demonstrator enters the premises, keep calm, be courteous and avoid an incident. Contact Security immediately.
- Avoid actions or verbal responses that may provoke the situation. Avoid arguments, provocative statements, or entering into a debate with a participant. They have entered the plant to propagandize, confront, or agitate the plant's occupants. Let them make their point. Frustrating them is dangerous. Do not try to reason with them.

3. **Workplace Violence**

It is the policy of Arkema Inc. to provide a work environment that is free from violence, threats of violence or intimidation for all personnel. Violence, threats of violence or intimidation of another individual in the workplace are never appropriate and will not be tolerated.

All reports of incidents regarding Acts or Threats of Violence will be taken seriously and dealt with immediately and appropriately.

Reporting

All employees who observe or experience an Act or Threat of Violence or intimidation should report it immediately to their direct supervisor, the Plant Manager, or the Regional Human Resources Manager.

Evaluation of Reports

When Plant Management reasonably believes an act or threat of violence or intimidation has been or may be committed, an evaluation will be made by the Corporate Threat Assessment Team in conjunction with Plant Management to determine the appropriate course of action.

Disciplinary Action

Individuals who commit acts of violence or intimidation or threaten violence or intimidation or who management reasonably believes pose a threat of violence are subject to:

Mandatory referral for a fitness for duty/dangerousness evaluation as a condition of continued employment, and or Disciplinary action, up to and including termination of employment.

In addition, an individual may also be subject to criminal prosecution.

The Arkema Inc. Crosby Plant strictly prohibits weapons of any type on plant property, (including in vehicles on plant premises) and at any Company sponsored events. This includes visible and concealed weapons, even those for which the owner has obtained the necessary permits. "Weapons" include but is not limited to, firearms, knives with a blade longer than "4", any explosive materials, or any other objects that could be used to harass,

intimidate, or injure another individual. Violators of this policy will be subject to disciplinary action, up to and including termination.

(G)Emergency Shutdown of Affected Process

Emergency procedures for the process units are available in the Hazard Analysis Process Emergencies section of the process operating procedures. These procedures provide guidelines as to normal operating conditions and parameters for each process and what actions should be taken in the event process conditions deviate from these parameters. These emergency procedures include the appropriate actions to take in the event of power failure, instrument air failure, refrigeration failure, water failure, uncontrollable reaction, equipment failure, decomposition/fire, or storage tank/process piping leaks. Operating procedures for each unit are located in the control room of that unit.

Trained operations personnel shall use these procedures to shutdown their unit as required (whether directly or indirectly affected by an emergency situation). The Operations Officer or Incident Commander may determine that an emergency situation has the potential to affect other plant activities, depending on the type and severity of the incident. Under certain circumstances, processes or activities in the immediate vicinity of the emergency may be shutdown or put in safe mode to prevent the incident from increasing in severity prior to the arrival of emergency responders. To do this, personnel who have been instructed by the Operations Officer or Incident Commander may begin to take limited action to shutdown the process or activity only if the following conditions are met:

- The alarms and safety systems have not alarmed or activated;
- No employee has to enter the unit;
- Personnel are trained for emergency shutdown of the particular process;
- Process materials can be safely deluged to the process sump (in the event it is needed); and
- Operators have complete control of process board.

NOTE: Personnel are to evacuate the area immediately when they cannot comply with all of the above requirements. Personnel are not to take any action beyond their training level.

The Incident Commander must be informed, as soon as safely possible, of whether or not the process or activity in the immediate vicinity of the emergency has been shutdown.

V. Decontamination Procedure

Whenever possible, remote sampling, handling, and container opening techniques shall be used to minimize need for worker exposure. Personnel shall wear disposable outer garments and use disposable equipment where appropriate.

The decontamination process shall consist of a series of procedures performed in a specific sequence. Each procedure shall be performed at a separate station in order to prevent cross-contamination. The level and types of decontamination procedures required depend on several site-specific factors, including:

- Properties of the material
- Amount, location, and containment of contaminants
- Potential for and location of exposure based on assigned worker duties, activities, and functions
- Proximity of incompatible materials
- Movement of equipment and personnel among different zones
- Type of emergency situation
- Impact of decontamination process on worker safety and health

Outer, more heavily decontaminated items, such as gloves and outer boots should be decontaminated and removed first followed by decontamination and removal of inner and less contaminated items.

(A) General Decontamination

All personnel who leave a contaminated area shall be appropriately decontaminated and all contaminated clothing and equipment that leaves a contaminated area shall be appropriately disposed of or decontaminated. Decontamination procedures shall be monitored by the Operations Officer to determine their effectiveness. When such procedures are found to be ineffective, appropriate steps shall be taken to correct any deficiencies.

Decontamination shall be performed in the designated Contamination Reduction Zone, as established by the Operations Officer. All equipment used for hazardous material release mitigation shall be decontaminated or disposed of properly. Protective clothing and equipment shall be decontaminated, cleaned, laundered, maintained, or replaced as needed to maintain the effectiveness of the clothing and equipment. Employees whose non-impermeable clothing becomes wetted with hazardous substances shall immediately remove that clothing and proceed to a shower. The clothing shall be disposed of or decontaminated before it is removed from the work zone. Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment shall be informed of the potentially harmful effects of exposure to hazardous substances to which they may be exposed.

(B) Level B Protection

All personnel, clothing, equipment and samples leaving the contaminated area of a site must be decontaminated to remove any harmful chemicals. A less concentrated decontamination solution may be needed for personnel decontamination as that which would be used for equipment decontamination. A wash/rinse process using the appropriated decontamination solutions listed below should follow physical removal of gross contamination. Table 5 describes minimum measures for decontamination and discusses layout of stations.

Table 5: Decontamination Stations Within Contamination Reduction Zone

Station 1	Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop cloths reduces the risk of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2	Outer Garment, Boot Covers, and Gloves Wash	Scrub boots covers, outer gloves and fully encapsulating suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3	Outer Boot and Glove Removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4	Tank Change	If worker leaves the Contamination Reduction Zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned, joints taped, and worker returns to duty.
Station 5	Boots, Inner Gloves, and Outer Garment Removal	Boots, inner gloves removed and deposited in separate containers lined with plastic.
Station 6	SCBA Removal	SCBA backpack and face piece is removed (avoid touching face with fingers). SCBA deposited on plastic sheets.
Station 7	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

(C) Recommended Supplies

All equipment used for decontamination must be decontaminated and/or disposed of properly. Buckets, brushes, clothing, tools and other contaminated equipment should be collected, placed in containers and labeled. Also, all spent solutions and wash water should be collected and disposed of properly. The HES Department should be contacted for disposal.

- *Drop cloths of plastic* - where heavily contaminated equipment and outer protective clothing may be deposited.
- *Collection containers* - drums or suitably lined trash cans for storing disposable clothing and heavily contaminated personal protective clothing or equipment that must be discarded.
- *Lined box with absorbents* - for wiping or rinsing off gross contaminants and liquid contaminants.
- *Large tub or wading pool* - to hold wash and rinse solutions. These should be at least large enough for a worker to place a booted foot in, and should have either

no drain or a drain connected to a collection tank or appropriate treatment system.

- *Wash solutions* - selected to wash off and reduce the hazards associated with the contaminants.
- *Rinse solution* - selected to remove contaminants and contaminated wash solutions.
- *Soft bristled brush* - should have long handle to help wash and rinse of contaminants.
- *Paper or cloth towels* - for drying protective clothing and equipment.
- *Metal drums* - for contaminated wash and rinse solutions.
- *Plastic sheeting* - for containing and collecting contaminated wash and rinse solutions spilled during decontamination.
- *Lockers* - for clean clothing and personal item storage.
- *Shower facilities or personal sink (at a minimum)* - for full body wash or to wash gloves and hands in.

(D) Decontamination Solutions

For unknown products:

Solution A: 5 percent sodium carbonate and 5 percent trisodium phosphate. Mix 4 pounds of commercial grade trisodium phosphate with each 10 gallons of water.

Rinse Solution: To be used for both solutions. Mix 4 lbs 5 percent trisodium phosphate solution with each 10 gallons of water.

For known products identified hazard classes:

Solution A: A solution containing 5 percent sodium carbonate and 5 percent trisodium phosphate.

Solution C: A solution containing 5 percent trisodium phosphate which can used as a general purpose rinse.

Solution E: A concentrated solution of Tide or other detergent and water. Mix into a paste and scrub with a brush. Rinse with water.

Selection

The following guidelines should be used for selecting the proper solutions for the type of hazard identified:

- Inorganic acids: Solution A
- Solvents and organic compounds: Solution A or C
- Nonacidic inorganic wastes: Solution B
- Oily, greasy, unspecified wastes not suspected to be contaminated with pesticides: solution C
- Inorganic bases, alkali and caustic wastes: Solution D
- Biological materials: Solution A and B

CAUTION: The decontamination solutions listed above are recommended for general groups of hazardous materials. The material data safety sheet of the product should be consulted for specific guidance.

(E) Emergency Decontamination of Affected Personnel

In an emergency, the primary concern is to prevent the loss of life or severe injury to personnel. If immediate medical treatment is required to save a life, decontamination shall be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential life-saving techniques or first aid, or if an employee has been contaminated with a corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately. If an emergency due to a heat-related illness develops, protective clothing shall be removed from the victim as soon as possible to reduce the heat stress.

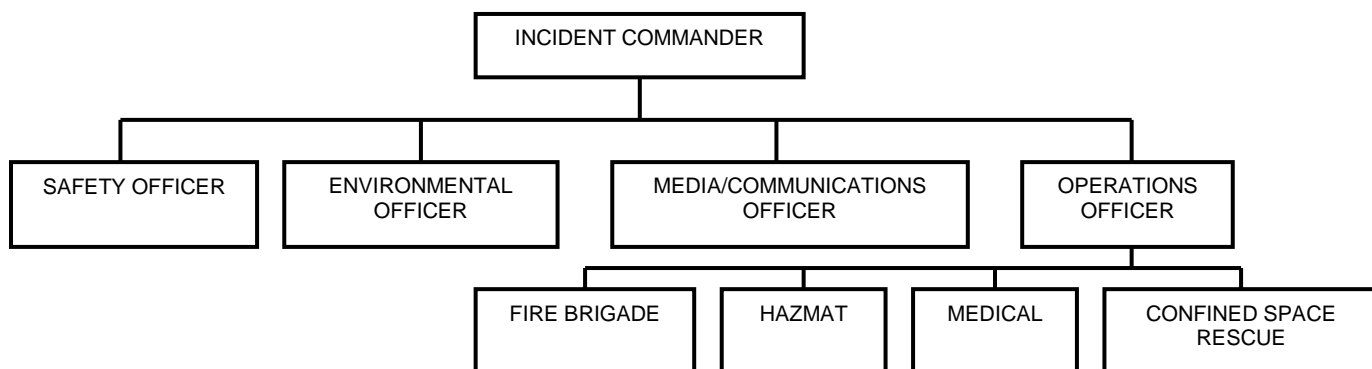
Plant medical team responders shall take measures to protect themselves from contaminants while performing emergency medical services on a victim. Personal protective equipment shall be worn and checked prior to use to ensure that it contains no tears or holes that could cause exposure to contaminants. In many cases, gross contamination can be removed by physical means involving dislodging/displacement, rinsing, wiping off, and evaporation. It may be necessary to cut off the victims' clothing or protective equipment to remove the contaminants. Physical removal of gross contamination shall be followed by a wash/rinse process. Medical team responders shall refer to the appropriate Material Safety Data Sheet (MSDS) for emergency and first aid information. The MSDS shall accompany the victim to the emergency medical facility.

Life Flight will not leave without an MSDS
(ensure several copies are made initially).

VI. PLANT EMERGENCY ORGANIZATION

(A) Organization Chart

The plant emergency organization chart is shown below.



The following is a job title list of who will fill the positions on the emergency response organizational chart:

Incident Commander

Production Supervisor – Primary
Production Manager – Secondary
HES Manager – Tertiary

Operations/Logistics Officer

Production Manager – Primary
Maintenance Manager – Secondary
Plant Manager – Tertiary

Safety Officer

Safety Engineer – Primary
HES Manager – Secondary
BAPP Facilitator/Safety Coordinator – Tertiary

Environmental Officer

HES Manager – Primary
Environmental Engineer – Secondary

Media/Communications Officer

Plant Manager – Primary
Production Manager – Secondary
HES Manager – Back-up

(B) Activation of Plant Emergency Organization (PEO)

The Emergency Response Plan is activated once the initial alert has been made to the unit control room, supervisor, or security. This contact shall be made via radio, PA, or telephone. Upon completion of the initial alert procedure, the Incident Commander shall assume responsibility of the on-site response efforts. Once activated only the Incident Commander can give the all-clear after the emergency is over.

(C) Use of Outside Emergency Assistance

The Incident Commander shall direct the use of all outside emergency services, including fire departments, emergency medical assistance, spill response contractors, and confined space rescue services.

1. Fire Departments

The Incident Commander with the assistance of the Operations Officer shall make the determination if assistance from local fire departments is necessary. Local fire departments shall be utilized for ALL level II and III incidents. A unified command shall be set, with the fire chief reporting to the Operations Officer. In the event that local fire departments are requested, the telephone call shall be made by the Safety Officer or designee, who shall request that the fire department report to the staging area crosswind of the incident. The fire department shall be staged from either Gate #1 or Gate #3, depending on the location of the incident. The Safety Officer shall designate a plant escort to meet the fire department at the staging area and bring them into the plant.

2. Emergency Medical Assistance

The use of outside emergency medical assistance is at the discretion of the plant Medical Team and Incident Commander. Medical Team members shall rely on their medical training and written Medical Protocol to make this determination. Some general guidelines on the use of outside emergency medical assistance are given below.

- An ambulance shall be called for life-threatening injuries, including, but not limited to, cardiac arrest, unconsciousness due to head injury or shock, electrical shock, heat stroke, extreme hypothermia, poisoning/overdose, respiratory distress, amputation, hemorrhage, seizures/convulsions. Depending on the severity of the trauma, Life Flight may be needed.
- During normal business hours, employees suffering injuries such as sprains/strains, fractures, chest pain, or shortness of breath may be escorted to the occupational clinic for review by the company physician. In the off-hours, victims shall be escorted to the local emergency room for these types of injuries.

- Conditions such as minor burns, insect stings, headache, muscular pain, minor lacerations or abrasions shall be treated on-site by the plant Medical Team.

In the event that outside emergency medical assistance is requested, the telephone call shall be made by the Safety Officer or designee. Have several copies of the MSDS for any chemicals that may have been involved in the injury of the affected persons (**Life Flight will not leave without copies of an MSDS**).

3. Spill Response Contractors

Spill containment shall be handled by the PEO. Spill response contractors shall be used for spill clean-up operations as needed. The Incident Commander shall consult with the Environmental Officer on the need for outside spill clean-up assistance. This determination shall be based on the physical characteristics of the chemical, size and location of the spill, environmental qualities of the chemical, and available on-site clean-up equipment and manpower. In the event that spill response contractors are utilized, the call shall be made by the HES Department.

4. Confined Space Rescue Services

In accordance with the facility's Confined Space Entry procedure, contract rescue personnel shall be on-site and prepared for immediate response at all times during work in permit-required confined spaces. At least two rescuers shall be available for each confined space entry. In the event that additional rescue services are required, the attendant shall notify the Incident Commander, who then shall make the necessary arrangements. The following information shall be provided to outside rescue services:

- The location of the confined space
- The number of persons involved
- The nature of the incident or injuries
- The known hazards of the confined space
- The external staging area where they must report

(D) Organization Responsibilities

This section of the Emergency Response Plan describes the purpose, responsibilities, and required training of those who respond to an emergency. Employees who are listed as officers within the organization may not be at the plant site when the emergency occurs. If an event occurs during non-business hours (nights, weekends, holidays), the Production Supervisor will assign appropriate personnel to essential roles until the designated personnel arrive at the plant.

1. Incident Commander

a) Purpose

The Incident Commander is responsible for the overall facility response to the incident including directing emergency response personnel in the field. The Incident Commander is responsible for setting up a centralized Command Post, which is the focal point for communications. This person will control lines of communication involving areas of the plant and the various response teams.

The Incident Commander will coordinate and consult with the Officers reporting to him: the Safety Officer, the Environmental Officer, the Media/Communications Officer, and the Operations Officer in the process of making decisions related to the emergency response.

b) Responsibilities

The Incident Commander will:

- Respond to all plant emergencies.
- Establish the Command Post in a safe location.
- Assess the situation and alert the various response officers and teams when their assistance is needed.
- Direct emergency responders to a safe staging area.
- Direct and coordinate the emergency response using established Incident Command System.

c) Training

The Incident Commander will be trained in incident planning and management, be familiar with the contents of this Plan, and be aware of the safety and health hazards associated with the materials in the plant.

The Incident Commander will receive training in the following areas:

- 24-hour Initial HazWoper training
- 8-hour HazWoper annual refresher
- Initial Industrial Firefighting
- Industrial Firefighting annual refresher
- Firefighting Techniques
- Incident Command System
- Hazard Communication

- Respiratory Protection Program
- Self Contained Breathing Apparatus (SCBA)
- SCBA Airpak refilling operations
- Crisis Communication
- RCRA Contingency Plan and Spill Prevention, Control, and Countermeasures (SPCC) Plan
- Emergency Response Plan Overview

2. **Safety Officer**

a) **Purpose**

The Safety Officer is responsible for assessing hazardous and unsafe situations and developing measures to ensure the safety of all facility personnel including those responding to the incident. The Safety Officer will also act as the Security Officer by supervising Security personnel in controlling access into the plant, directing outside Emergency Responders into the site, and crowd control.

The Safety Officer provides assistance to the Incident Commander and the Operations Officer by identifying and analyzing safety concerns and reporting solutions to the Incident Commander. The Safety Officer is responsible for a safe response to emergencies, providing training to the Plant Emergency Response Team, and ensuring that adequate emergency response equipment is available on the plant site. The Safety Officer may stop any activity that endangers response personnel.

b) **Responsibilities**

The Safety Officer will:

- Respond to all plant emergencies.
- Coordinate training of Plant Emergency Response personnel.
- Evaluate and provide the Emergency Response equipment and supplies.
- Assure that all Emergency Response is accomplished in a safe manner.
- Direct Security personnel in controlling access to the plant.
- Ensure head counts are taken during emergencies.
- Coordinate and organize plant evacuation, if necessary.
- Assure that all emergency equipment is restored to a state of readiness after the emergency is over.

c) **Training**

The Safety Officer will receive training in the following areas:

- 24-hour Initial HazWoper training
- 8-hour HazWoper annual refresher
- Incident Safety Officer
- Initial Industrial Firefighting
- Industrial Firefighting annual refresher
- Firefighting Techniques
- Hazard Communication
- Respiratory Protection Program

- SCBA Airpak refilling operations
- Emergency Response Plan Overview

3. **Media/Communications Officer**

a) **Purpose**

The Media/Communications Officer is the person who arranges for all media contact with the plant. The Media/Communications Officer is also the focal point for all communications from the Command Post. This person will set up and control lines of communication with regulatory agencies, other company contacts, and all outside calls for necessary Emergency Responders. This person will provide technical support, such as maintenance, building services, and arranging off-site services. The Media/Communications Officer will assist with the activities of the Environmental Officer.

b) **Responsibilities**

During an emergency situation, the Media/Communications Officer, or designee, will:

- Coordinate activities with the Incident Commander.
- Establish media contact, if necessary. The Plant Manager is the designated spokesperson for the plant.
- Respond to all plant emergencies and set up a Communications Center. This shall usually be in the Administration Building. If this location is unsafe, the Media/Communications Officer shall set up at an alternate site.
- Receive incoming calls from outside sources.
- Make notifications to Mfg Director and PR per the C.C. manual.

c) **Training**

The Media/Communications Officer will receive training in the following areas:

- Crisis Communication
- Hazard Communication
- Incident Command System
- Emergency Response Plan Overview

4. **Environmental Officer**

a) **Purpose**

The Environmental Officer assesses the environmental impact of the incident, advises the Incident Commander in spill control and mitigation, and contacts outside Environmental agencies.

b) **Responsibilities**

In the event of an emergency incident, the Environmental Officer will:

- Respond to all plant emergencies.
- Coordinate activities with the Incident Commander.
- Wait for call from Incident Commander and assist as instructed.
- Contact environmental agencies in the event of a spill or release to the environment.

- Maintain an inventory of spill response equipment.
- Arrange for the services of outside spill control equipment or services.
- Assess environmental impact of any release to the environment, which includes analytical monitoring as required.
- File follow-up reports with environmental agencies and keep Corporate HES advised of the emergency.

c) **Training**

The Environmental Officer will receive training in the following areas:

- 24-hour Initial HazWoper training
- 8-hour HazWoper annual refresher
- RCRA Contingency Plan, and the Spill Prevention, Control, and Countermeasures (SPCC) Plan
- Crisis Communication
- Hazard Communication
- Emergency Response Plan Overview

5. **Operations Officer**

a) **Purpose**

The Operations Officer has direct control of the plant Emergency Response Team that includes the Fire Brigade, HAZMAT, Medical, and Confined Space Rescue Teams. The Operations Officer directs response activities in coordination with the Incident Commander.

b) **Responsibilities**

During an emergency incident the Operations Officer will:

- Direct the Fire Brigade, the HAZMAT Team, the Medical Team and the Confined Space Rescue Team; direct response efforts emphasizing search and rescue, medical treatment of the injured, firefighting, pollution prevention, and conservation of assets.
- Work closely with the Safety Officer.
- Maintain communication with the Incident Commander.
- Recommend emergency shutdown and/or evacuation of areas. Make requests for outside assistance.

c) **Training**

The Operations Officer will receive the following training:

- 24-hour Initial HazWoper training
- 8-hour HazWoper annual refresher
- Incident Safety Officer
- Initial Industrial Firefighting
- Incident Command System
- Hazard Communication
- RCRA Contingency Plan, and the Spill Prevention, Control, and Countermeasures (SPCC) Plan
- Emergency Response Plan Overview

6. **Fire Brigade**

a) **Purpose**

The purpose of the Fire Brigade is to perform incipient-stage firefighting. Firefighting beyond the incipient stage shall be done for exterior firefighting only, with assistance provided from the Crosby Volunteer Fire Department as necessary.

The Fire Brigade shall respond to all fire emergencies when called, be prepared to extinguish all fires, prevent the spread of fire, and minimize the damage caused by a fire.

Hourly production and shipping/receiving personnel medically qualified for emergency response operations shall be trained as members of the fire brigade. Additionally, the Shift Supervisors, Operations Support Manager, Maintenance Superintendent, and I&E Engineer are trained as fire brigade members.

Each rotating shift has approximately four to five fire brigade members, including chemical operators, utility operators, and shift supervisors. In addition to the shift members, during normal business hours approximately twelve additional fire brigade members are available from the administrative, shipping/receiving, and maintenance departments.

b) **Responsibilities**

At the sound of an alarm indicating a fire, Fire Brigade members will don their fire bunker gear and nearest SCBA and report to the designated staging area or as assigned by the Incident Commander from an upwind direction. Fire Brigade members will receive orders from the Operations Officer or the Incident Commander. The facility's bunker gear requirements are given in Appendix C.

c) **Training**

Fire Brigade members will receive the following training:

- 24 HR Initial Exterior Industrial Firefighting
- 8 HR Exterior Industrial Firefighting annual refresher
- Firefighting Techniques
- Respiratory Protection Program
- Self Contained Breathing Apparatus (SCBA)
- SCBA Airpak refilling Operations
- Emergency Response Plan Overview

In addition, all Fire Brigade members must be medically cleared to perform emergency response to include wearing respiratory protection.

7. **Hazardous Materials Team**

a) **Purpose**

At a minimum, all ARKEMA employees are trained to the First Responder Awareness Level. At the awareness level, employees are trained in Hazard Communication and the Emergency Response Plan. These individuals are likely to witness or discover a hazardous substance release or spill and are trained to initiate the emergency response sequence by notifying their supervisor or manager. They take no further action beyond notification.

Maintenance, operations, and shipping/receiving personnel are trained at the First Responder Operations Level and at the Hazardous Materials Technician level. These individuals make up the HazWoper Team, whose members respond to releases or potential releases as part of the initial response to the site for the purpose of protecting nearby persons, property, and the environment from the effects of the release. HazWoper Team members contain the release from a safe distance, keep it from spreading, and prevent exposures. The emergency is approached with the intent of plugging, patching, or otherwise stopping the spill or release. HazWoper Team members operate at the instruction of the Operations Officer or the Incident Commander.

Supervisors are trained at the On Scene Incident Commander Level. These individuals will assume control of the incident scene beyond the first responder awareness level.

b) **Responsibilities**

Members of the HazWoper Team will report to the scene of a spill or release of hazardous material to stop the release or spill and control the further spread of the material. HazWoper Team members will keep the Operations Officer informed of the situation so that the proper notification of government agencies can be made and appropriate monitoring can be performed during the emergency and after the emergency has been controlled. Personal protective equipment requirements for spill response are given in Appendix C.

c) **Training**

HazWoper Team members will receive the following training:

- 24-hour Initial HazWoper training
- 8-hour HazWoper annual refresher
- Emergency response equipment
- Hazard Communication
- RCRA Contingency Plan, and the Spill Prevention, Control and Countermeasures (SPCC) Plan
- Respiratory Protection Program
- Self Contained Breathing Apparatus (SCBA)

- SCBA Airpak refilling operations
- Emergency Response Plan Overview

In addition, all HAZMAT members must be medically cleared to perform emergency response to include wearing respiratory protection.

8. **Confined Space Rescue Team**

a) **Purpose**

An outside contractor is utilized for confined space rescues, as specified in the facility's Confined Space Entry Procedure. Plant personnel are not trained in confined space rescue operations.

b) **Responsibilities**

The Rescue Team will perform rescue of any individual, rendering first aid and/or CPR as needed.

9. **Medical Team**

a) **Purpose**

Medical Team members provide First Aid to injured personnel. They report to the Operations Officer or Incident Commander. Emergency Medical Technicians, Emergency Care Assistants, and CPR/First Aid trained employees provide first aid care. They will coordinate medical treatment utilizing outside Emergency Medical personnel as needed.

QC Laboratory personnel and Supervisors shall be designated and trained as Medical Team members. Additionally, volunteers from the operations department are accepted as needed.

b) **Responsibilities**

The Medical Team members will:

- Respond when notified by the Operations Officer, Safety Officer, or Incident Commander to the designated staging area.
- Establish a Triage area as necessary.
- Remain in radio contact with the Operations Officer.
- Administer CPR/First Aid.

c) **Training**

The members of the Medical Team will receive the following training:

- Annual CPR/First Aid/AED Certification
- Blood borne Pathogens Exposure Control Measures
- Medical Equipment
- Emergency Response Plan Overview

VII. CHEMICAL SAFETY INFORMATION

A hazardous material is any substance or mixture of substances having properties capable of producing adverse effects on the health or safety of a human. Listed in Table 6 are the hazardous materials present in the facility, as defined by the Occupational Safety & Health Administration's (OSHA) Process Safety Management (PSM) standard, 29 CFR 1910.119 App. A and the Environmental Protection Agency's (EPA) List of Extremely Hazardous Substances, 40 CFR 355 Appendices.

Table 6: Hazardous Materials at the Crosby Plant

HAZARDOUS MATERIAL	HAZARD	LOCATION	MAXIMUM INTENDED INVENTORY
70% Hydrogen Peroxide	Corrosive, Oxidizer	MPU 30-T-63	147,500 lbs
Acetone	Flammable	BPU 4-T-74	12,000 lbs
Acid Chlorides (Benzoyl Chloride, Pivaloyl Chloride, Neodecanoyl Chloride, 2-Ethylhexanoyl Chloride, Neo-heptanoyl Chloride)	Corrosive, Toxic, Water Reactive	BCI: 17-T-20 PCI: 17-T-24 NDCI: 17-T-22 2EHCl: 17-T-26 NHCL: BLDG 10 DRUM PAD	BCI 91,000 lbs PCI 75,000 lbs NDCI 75,000 lbs 2EHCl 72,500 lbs NHCL: 7000 lbs
t-Amylene	Flammable	BPU 4-T-26A	58,000 lbs
t-Amyl Hydroperoxide	Flammable, Corrosive	BPU 4-T-51, 4-T-88 MPU 30-T-57	81,000 lbs
t-Butyl Hydroperoxide	Combustible, Reactive	BPU 4-T-68	70,000 lbs
Isobutylene*	Flammable	MPU 30-T-71	74,000 lbs
Organic Peroxides	Corrosive, Flammable, Reactive	Storage buildings 1, 2, 3, 8, 9, 10, 13, 21, 27, 40; MPU Processes	3.7 million lbs
Sulfur Dioxide*	Toxic	17-T-19	71,000 lbs
Sulfuric Acid	Corrosive, Water Reactive	MPU 30-T-60 (78%) MPU 30-T-69 (93%)	469,000 lbs

*Risk Management Program(RMP) Chemicals

The information presented below for the chemicals listed in Table 6 is intended to act as a guideline for the handling of these substances during emergency response activities. The safety data sheets (SDSs) or the U.S. Department of Transportation's Emergency Response Guidebook should be consulted for further information. SDSs are available for all chemicals at the facility. The SDS hard copies are located at the QC Laboratory. SDS's are also available electronically on the company intranet through Annie.

(A) Risk Management Program Chemicals

1. Isobutylene

Isobutylene is an extremely flammable gases that irritate the eyes and skin. This materials may ignite at ambient temperatures. Rapidly expanding gas or vaporizing liquid may cause frostbite or burns to the eyes and skin. Air contamination may cause peroxide formation and instability.

These materials can accumulate a static charge that may cause an electrical spark. Proper bonding and grounding procedures must be used. Do not pressurize, cut, heat, or weld containers. If a leak or spill has not ignited, use water spray to disperse the vapors. Do not extinguish flames at the leak because the possibility of uncontrolled explosive re-ignition exists. Small residual fires may be extinguished with dry chemical powder or water spray.

Refer to the Major Spills/Releases section for emergency response procedures and first aid.

2. Sulfur Dioxide

Sulfur dioxide is stored as a colorless, pressurized liquid with a pungent odor. Sulfur dioxide is harmful if inhaled. Exposure may cause skin, eye, and respiratory tract irritation. Overexposure may cause an allergic respiratory reaction. Liquid sulfur dioxide may cause frostbite or burns to the eyes and skin. Contact with water may produce sulfuric acid.

Small leaks may be detected by ammonium hydroxide solution. A dense, white fume is formed in the presence of sulfur dioxide. Never apply water to a leak, as this causes the material to be more corrosive.

Refer to the Major Spills/Releases section for emergency response procedures and first aid.

(B) Other Hazardous Materials – Storage and Handling

1. 70% Hydrogen Peroxide

Hydrogen peroxide used at this facility is a solution of 70% hydrogen peroxide and 30% water. The solution is a colorless liquid with a pungent odor. Hydrogen peroxide is a powerful oxidizer. Contact with metals, oils, wood, dust, shavings, dry vegetation, and organics may cause rapid decomposition and explosion. Hydrogen peroxide may cause irritation and burns to the eyes and skin.

Decomposition of hydrogen peroxide generates oxygen, which promotes combustion of flammable materials. Mixtures with combustible materials may be explosive. Large amounts of water should be applied to hydrogen peroxide fires for cooling and dilution.

2. Acetone

Acetone is a clear liquid with a characteristic strong ketone odor. Acetone is flammable and highly volatile, readily giving off vapors that will travel along the ground and may find an ignition source. Acetone may cause irritation to the eyes, skin, and respiratory tract.

Acetone can accumulate a static charge that may cause an electrical spark. Proper bonding and grounding procedures must be used. Use only non-sparking tools and equipment. Do not pressurize, cut, heat, or weld containers. Closed containers exposed to heat may explode. Fires may be extinguished with water spray or fog, dry chemical powder, foam, or carbon dioxide. This material may produce a floating fire hazard.

3. Acid Chlorides

Acid chlorides at this facility include benzoyl chloride, pivaloyl chloride, 2-ethylhexanoyl chloride, neo-heptanoyl chloride, and neodecanoyl chloride. These are generally colorless liquids with pungent odors. Acid chlorides are highly corrosive to the eyes, skin, and respiratory tract. Their fumes are severely irritating to the eyes and respiratory tract. Acid chlorides may also be flammable, and should never be mixed with water, oxidizers, alkalis, alcohols, or amines, as they will decompose rapidly in these compounds.

Contact with water will generate toxic hydrogen chloride gas and flammable vapors. Dry chemical powder fire extinguishers should be used for small fires involving acid chlorides. For large fires, water spray should be used to flood the area with water fog used to knock down the vapors. Water may be used to cool intact containers to prevent decomposition, but should not be used on spilled material.

4. Isoamylene (t-Amylene)

Isoamylene is a flammable gases that irritate the eyes and skin. This materials may ignite at ambient temperatures. Rapidly expanding gas or vaporizing liquid may cause frostbite or burns to the eyes and skin. Air contamination may cause peroxide formation and instability.

These materials can accumulate a static charge that may cause an electrical spark. Proper bonding and grounding procedures must be used. Do not pressurize, cut, heat, or weld containers. If a leak or spill has not ignited, use water spray to disperse the vapors. Do not extinguish flames at the leak because the possibility of uncontrolled explosive re-ignition exists. Small residual fires may be extinguished with dry chemical powder or water spray.

5. Organic Peroxides

Organic peroxides produced at this plant fall into general classes of peroxyesters, dialkyl peroxides, hydroperoxides, and peroxyketals.

Organic peroxides will burn vigorously, and once ignited will be difficult to extinguish. The flammability of organic peroxides is also affected by the decomposition products. When most peroxides begin to decompose, they will generate vapors and heat. Such vapors may be flammable and could be the cause of an explosion. Organic peroxide fires may be extinguished using water spray, foam, or dry chemical.

Organic peroxides are temperature sensitive and care should be taken to ensure proper storage conditions. Use bonding and grounding connection when transferring material to prevent static discharges, fire, or explosion. Chemical contamination can accelerate decomposition of organic peroxides. Care should be taken to avoid all forms of contamination, as they may initiate a rapid decomposition. Brass, copper, or iron materials should not be used with organic peroxides. Stainless steel 304/316 is the preferred material of construction.

a) Peroxyesters

This organic peroxide class includes Luperox P. Peroxyesters are quite stable at their recommended storage temperatures. The recommended temperatures for those requiring refrigerated storage should be strictly adhered to (consult the product's MSDS).

b) Dialkyl Peroxides

This organic peroxide class includes Luperox DI. Most dialkyl peroxides have relatively high flash points, but once ignited, will burn vigorously and are difficult to extinguish. However, di-t-amyl peroxide and di-t-butyl peroxide have a low flash point and their vapors are highly flammable; thus, they must be handled as a flammable liquid as well as an organic peroxide.

c) Hydroperoxides

This organic peroxide class includes Luperox tAHP. Hydroperoxides are generally corrosive to the eyes and skin. Hydroperoxides, in particular cumene hydroperoxide, are sensitive to contamination. Contact with incompatible materials (such as strong acids, strong bases, strong oxidizers, and reducing agents) can lead to a violent decomposition.

d) Peroxyketals

This organic peroxide class includes Luperox 231. Peroxyketals are extremely sensitive to acid contamination. Contamination causes rapid decomposition, releasing flammable vapors that may self ignite. Specific handling and use information is provided in the product MSDS. This O.P. class includes Luperox 531.

6. Sulfuric Acid

Sulfuric acid used at this facility is a concentrated solution of acid and water. It is a colorless, oily liquid with no detectable odor. Sulfuric acid is highly corrosive to the eyes, skin, and mucous membranes. Although not combustible, it is a strong oxidizer whose heat of reaction with combustible materials may cause ignition. Sulfuric acid reacts violently with water, bases, organic materials, and halogens. Contact with metals may produce an explosion.

The reaction of sulfuric acid with water produces heat and corrosive materials. Dry chemical powder fire extinguisher should be used for small fires involving sulfuric acid. For large fires, water spray should be used to flood the area with water fog used to knock down the vapors. Water should not be applied to un-ignited sulfuric acid spills.

Table 7: Hazardous Substances Reportable Quantity Tables

TABLE 7A LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES FOR THE CROSBY FACILITY – 40 CFR 302.4	
CHEMICAL NAME	RQ (LBS)
2-Ethylhexanoyl Chloride ¹	100
2-Ethylhexyl Chloroformate ¹	100
Acetic Acid	5000
Acetic Anhydride	5000
Acetone	5000
Benzoyl Chloride	1000
Isobutylene ¹	10000
Neo-Decanoyl Chloride ¹	100
Neo-Heptanoyl Chloride ¹	100
Odorless Mineral Spirits ¹	100
Pivaloyl Chloride ¹	100
Potassium Hydroxide	1000
Sodium Hydroxide	1000
t-Butyl Hydroperoxide ¹	100

Note 1: Chemical is not specifically listed in 302.4, but is reportable as a characteristically hazardous waste.

Hazardous Substances Reportable Quantity Tables

TABLE 7B LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES FOR THE CROSBY FACILITY – 40 CFR 355 APPENDICES	
CHEMICAL NAME	RQ (LBS)
Chlorine	10
Sulfuric Acid	1000
Sulfur Dioxide	500
Hydrogen Peroxide (>52%)	1000

TABLE 7C LIST OF RISK MANAGEMENT PROGRAM CHEMICALS FOR THE CROSBY FACILITY – 40 CFR 68.130	
CHEMICAL NAME	TYPE
Isobutylene (2-Methyl Propene)	Flammable
Sulfur Dioxide	Toxic

VIII. EMERGENCY PREVENTION PLAN

Many of the products manufactured and the raw materials used at the Crosby plant are classified as fire hazards or toxic. For this reason, the requirements of the Emergency Prevention Plan (EPP) section are already being met by existing plant procedures, rules, and regulations. This plan will outline where these requirements are being met in the existing plant procedures, rules, or regulations as well as a review of major plant hazards.

(A) Vulnerability Analysis and Scenerios

A general, plant wide list of all hazardous materials are found in Table 7 in the previous section. Further, the Process Hazard Analysis section of each product Operating Procedure lists the hazards particular to the manufacture of that product. Table 8 is a list of potential major emergencies and associated safeguards.

Table 8: Major Hazard Scenarios

SCENARIO	POTENTIAL CAUSE	SAFE GUARDS
Isobutylene vapor cloud explosion and/or BLEVE (Fatality)	Loss of containment during the unloading process from hose, fittings and/or valves (also requires ignition source)	LEL Detectors around the tank tied to automatic vessel isolation, PSVs, Local/automatic shut-off for the operator
Major SO2 leak or vessel rupture (Major Environmental Release)	Loss of containment during the unloading process from hose, fittings and/or valves	Local SO2 monitors with automatic action, local shutoff, hose testing, SO2 personnel monitors
Organic peroxide (OP) decomposition in chill cabinet or remote storage (Potential explosion)	Improper steps or procedures followed, mechanical failure, defrost cycle errors and/or Loss of Power	Temperature Indication in the control room w/ alarm, local/remote temperature indication with alarm, 2-hour operations checks and/or redundant local temperature alarm
Organic peroxide decomp in reactor during batch Rx (Decomp leading to potential Explosion)	Loss of cooling (brine), agitation, high acid concentration, flammable atmosphere in vapor space of vessel (i.e. Lup 101)	Multi-point temperature probes in main reaction vessel, high and high temperature alarm, D&D temperatures in SIS, N2 Purge, LEL Detectors.
Organic peroxide decomp in reactor during continuous processing. (Decomp leading to Potential Explosion)	Isobutylene/Isoamylene ratios not correct, over concentrated hydrogen peroxide or acid, inadequate cooling of streams	Multiple density meters with deviation alarms, automatic shutoff of all feeds for > 10% deviations in flow or density, high temp alarm and D&D on columns in SIS, Hard set-point in DCS so that flow cannot be altered by operator during operation.
Trapped Hydrogen Peroxide in process line (Line Burst and release)	Human error, Inadequate pressure relief in hydrogen peroxide Service	PSV on discharge of pumps, pressure relief in transfer lines, high flow alarms on H2O2 Lines, interlock on transfer pump, relief routing into the system
Mis-labeled Product placed in wrong storage location (Building Fire)	Human error due to lack of awareness, or risks, inattentiveness	Differentiated colors & symbols for product labels (ex. cold products are speciated by 'snow flake' symbol), weigh bills for partial pallets, high temp alarms for storage buildings, redundant temp. alarms , wireless system for door monitoring.

(B) General Workplace Fire Prevention

Potential ignition sources include smoking, welding, boilers, and static electricity. Smoking is allowed only in designated areas (*General Loss Control Rules, SAFP7003*). Welding can only be undertaken with a welding permit (*Safe Work Permit Manual, SAFP7095*). A weekly check is made of the operation of each boiler. Grounding of process equipment and storage containers is used to control static electricity and is checked on a regular basis. The *Safety Equipment and Inspection Manual (SAFP7000)* describes the inspection of the site's grounding connections. Weekly inspections and annual maintenance is performed on plant fire sprinkler systems and monthly inspections of fire extinguishers (*Safety Equipment and Inspection Manual, SAFP7000*).

Written unloading procedures describe the proper methods to be used when unloading and loading tankers of flammable materials.

The two main fire protection systems used by the plant are an automatic sprinkler system (a description of building sprinkler system can be found in Table 10) and an exterior industrial fire brigade. Automatic sprinklers are inspected weekly and serviced checked quarterly. The actions of the Exterior Industrial Fire Brigade are discussed in other section of this document.

(C) Maintenance of Equipment to Prevent or Control Fires

The Safety Engineer is responsible for the maintenance of sprinkler equipment and systems installed to prevent or control ignitions or fires. See list of plant sprinkler system in Table 10.

(D) Control of Fuel Source Hazards

The Maintenance Manager and Production Supervisor are responsible for the proper storage and control of fuel source hazards in their work areas.

(E) Housekeeping and Storage

The *General Loss Control Rules, SAFP7003* and *Safe Work Permit Manual, SAFP7095* describe general plant rules for fire prevention. Warehouse and certain operating procedures further deal with specific housekeeping and storage instructions.

IX. PLAN REVIEW and TRAINING

The Emergency Response Plan shall be reviewed annually. Safety Engineer and/or HES Manager Safety Engineer, and hourly employee participation shall conduct this review. The Safety Department is responsible for making changes to the plan as a result of an annual review.

Each employee with responsibilities in this plan shall inform the HES/LC Manager if conditions have changed that would require changes to the plan. Retraining will be conducted whenever employee responsibilities or designated actions described in the Plan change.

(A) Drills/Training/Meeting

Emergency Response team meetings will be held in conjunction with site drills and or ERT training. Emergency team meeting, training or drills will be conducted at a minimum bi-monthly.

Emergency Response training is necessary to effectively and safely respond to and mitigate the various types of emergencies and to meet regulatory compliance.

Selected contents of this Emergency Response Plan shall be reviewed with each employee covered by this plan whenever the employee's responsibilities or designated actions change or whenever the plan is changed. This training may be accomplished using web-based training modules in the Learning Management System, classroom presentations, or 8-hour HazWoper refresher training sessions.

Contractors receive annual off-site training on this facility's Emergency Response Plan at the Industrial Safety Training Council. Plant visitors and truck drivers receive emergency procedures training annually during the HES orientation process. The training covers notification of an emergency situation, assembly procedures, facility assembly points, shelter-in-place instructions, and plant evacuation.

1. Evacuation

An evacuation drill will be performed at least annually. The Production Department is responsible for scheduling the evacuation drills. Appropriate arrangements will be made to ensure that all employees are involved in at least one evacuation drill each year.

2. Emergency Response

The HES Department is responsible for ensuring that each shift at the plant performs an emergency response drill quarterly. The drills will cover the three levels of plant emergencies, addressing fire, hazardous materials release, medical emergency, and multi-faceted incidents. Emergency drills may be

conducted during off-shifts and shift changes to test the capabilities of the emergency response organization using reduced manpower and during challenging time changes. HazMat and fire team drills must be conducted at a minimum twice a year.

All employees participate in at least one emergency response drill each year. Tabletop exercises may also be used in conjunction with emergency drills, although they alone do not satisfy quarterly drill requirements. At least one emergency response drill each year shall include the activation and participation of outside emergency responders.

3. Headcount

The HES Department ensures that headcount drills are conducted at least monthly. Headcount drills may be conducted during off-shifts and shift changes.

(B) Critique of Response and Follow-Up

Upon completion of a drill or actual emergency, the emergency response team members and other appropriate representatives of the facility and/or agencies involved shall meet to discuss and critique the response. Input provided on the successes of the response and the opportunities for improvement shall be recorded in a emergency response critique report. The critique shall be issued to plant management and production supervisors. Item identified in the response critique as needing improvement shall be tracked to completion in the IMPACT Enterprise system. This system shall provide a follow-up means to ensure the improvement opportunities are implemented and completed in a timely manner.

X. FACILITY INFORMATION and EMERGENCY RESPONSE EQUIPMENT

(A) General Facility Information

1. Topographic Map

A topographic map of the plant area is given in Appendix B.

2. Plant Structures

A list of the name and identification number assigned to plant structures is given in Table 9. Below is a list of abbreviations used in the table.

BPU = Batch Perester Unit
MPU = Multi-Purpose Unit
MCC = Motor Control Center
QC = Quality Control
WWTF = Waste Water Treatment Facility

3. Storage Plot Plans

The facility plot plan with oil storage locations is shown in Appendix B. Appendix B shows hazardous waste storage locations.

4. Drainage

Facility drainage is shown in Appendix B.

Table 9: Name and Identification of Plant Structures

ID NUMBER	BUILDING DESCRIPTION	ID NUMBER	BUILDING DESCRIPTION
1	Product Storage/Logt Office	24	Out of Service
2	Low Temp Product Storage	25	Out of Service
3	Low-Temp Product Storage	26	Fire Pump House
4	BPU & Main Office Bldg	27	Low-Temp Product Storage
4A	Office Bldg (HES/Acct)	29	MPU Control Room/PO/Offices
5	Chlorinator Bldg (under Tower)	30	MPU Process Bldg
7	Miscellaneous Packaging Storage	31	DI/Hydro Continuous Process Unit
8	Low-Temp Product Storage	32	MPU MCC/DCS Bldg
9	Low-Temp Product Storage	33	MPU Sample Bldg
10	Container/Packaging/Storage	34	CPU Boiler Bldg
10W	Drum Pad/Product Storage	35	Maintenance Stores
12	Scaffold Storage	36	Chemical/Lubricant Storage Bldg
13	Low Temperature Control Bldg	37	Maintenance Storage Bldg
14	WWT Control and Warehouse	38	Security Bldg
15	Nitrogen Generator	39	WWTF MCC Bldg
16	QC Lab/Packout/ER Equipment	40	Low-Temp Product Storage
18	Out of Service	41	Waste Drum Storage
19	Lawn Care Equipment Storage	42	Maintenance Mechanical Shop
20	Out of Service	43	MPU Thermal Oxidizer
21	50°F Storage		
22	Maintenance I&E Shop/Storage		
23	Out of Service		

(B) Fixed Fire Suppression Systems

The fire water system is a multi-level prevention/response system used to prevent/extinguish/mitigate fires, explosions, or chemical spills. The primary source of water for the system comes from a 500,000 gallon tank, which is replenished by a float-level control and gravity fed from the plant water tower, which gets its water pumped from the plant water well.

1. Deluge/Sprinkler

There are twenty-two (22) deluge/sprinkler systems in the plant. The systems are identified with the areas they serve in Table 10. These systems activate automatically at the detection of heat (thermal detection). In the event that the automatic trip does not trigger, a manual mechanical activation is available. Additionally, manual pull stations for some systems are located in the unit control rooms. The Fire Water Deluge Systems safety procedure outlines the plant's procedure for activation of plant deluge systems.

Weekly sprinkler servicing and testing is performed according to the Plant Safety Equipment and Inspection Manual (SAFP7000). Items checked include pressure, general condition, status of valves and stations. A quarterly dry test and annual wet test of each system is scheduled by the HES Department and conducted by contract personnel.

Table 10: Plant Fire Systems

EQUIPMENT #	AREA OF SERVICE	STATUS	REMOTE TRIP	TYPE
1-FIRESYS-1	Storage Building 1	Active	N/A	Wet-pipe
4-FIRESYS-1 (B)	Weigh Rms, West Dock, Whse	Active	N/A	Wet-pipe
4-FIRESYS-2 (D)	BPU CR, PO, East Dock, MCC	OOS	N/A	Wet-pipe
4-FIRESYS-3 (C)	BPU Filter, PO Tks, TF	OOS	BPU Ctrl Rm	Deluge
4-FIRESYS-4 (A)	BPU Process	OOS	BPU Ctrl Rm	Deluge
10-FIRESYS-1	Storage Bldg 10	Active	N/A	Wet-pipe
10-FIRESYS-2	Bldg 10W and Drum Pad	Active	N/A	Wet-pipe
14-FIRESYS-1	Bldg 14: WWT	Active	WWT Ctrl Rm	Dry-pipe
16-FIRESYS-1	Bldg 16 Packout	Active	N/A	Wet-pipe
21-FIRESYS-1	Storage Building 21	Active	N/A	Wet-pipe
25-FIRESYS-1	BPU Bldg 25 and BPU Sumps	OOS	N/A	Dry-pipe
29-FIRESYS-1	MPU CR, Weigh Rm, Offices	Active	MPU Ctrl Rm	Preact
29-FIRESYS-A	MPU Packout	Active	MPU Packout	Wet-pipe
30-FIRESYS-1	MPU Process Bldg 30	Active	MPU Ctrl Rm	Deluge
31-FIRESYS-1	MPU Continuous Structure	Active	MPU Ctrl Rm	Deluge
MPU	MPU Acid/Non-acid Sumps	Active	MPU Ctrl Rm	Deluge
WWT	Equalization Tanks 14-T-2A/B	Active	N/A	Deluge
41	Bldg 41	Active	N/A	Dry-pipe

2. Fire Detection Panels

Three (3) fire detection panels are present in the facility: Building 29 MPU Control Room, Building 32 MPU MCC, and Building 39 WWT MCC. Fire detection panels activate the deluge systems and are inspected semi-annually by an outside contract service.

3. Nitrogen

Nitrogen is used for emergency cooling of low-temperature refrigerated storage buildings. Liquid nitrogen is piped to eight (8) storage buildings: 2, 3, 8, 9, 13, 27, and 40. The nitrogen is supplied from tank 16-T-N₂, located directly south of building 16.

4. Fire Pumps

Two fire pumps, 26-P-1, 26-P-2, and 26-P-4(jockey pump), are present in the facility. The pumps are sheltered in building 26. The fire water system is pressurized up to 165 psig by a main 2500 GPM diesel and a 1000 GPM backup diesel, which is energized on low pressure by a 20 GPM electric jockey pump. Information on the facility's fire pumps and related equipment is given in Table 11.

The fire pumps shall be tested and inspected weekly by plant Maintenance personnel. During this inspection, the pumps are activated by opening a fire hydrant. Each pump shall be run for thirty minutes to verify pressure. The oil level and air filters shall be checked and changed as necessary (at least annually).

Table 11: Plant Fire Pumps and Supporting Equipment

<i>Fire Pumps</i>			
Equipment	Manufacturer/Model	Engine	Flow Rate
26-P-1	Patt 8X6YS	Cummins diesel	2500 GPM
26-P-2	Aurora 481BF	Detroit diesel	1000 GPM
26-P-4	Grundfos CR4-100V	N/A	20 GPM
<i>Supporting Equipment</i>			
Equipment	Description		Volume
26-T-2	Diesel fuel tank for 26-P-1		500 gallons
26-T-3	Main Diesel Tank		2000 gallons
26-T-5	Diesel fuel tank for 26-P-2		500 gallons

(C) **Explosion Suppression Systems**

1. Portable Atmospheric Monitors

The Industrial Scientific monitors shall be used to evaluate atmospheric levels of oxygen, LEL, and carbon monoxide in a work area. Two of these monitors are available in the plant and are located in the Supervisors' Office (Bldg 29). The monitors are routinely used by the production supervisors when issuing safe work permits. In the event of an emergency, these monitors are available to the Incident Commander, Operations Officer, and Safety Officer, as

needed, to establish support, contamination-reduction, and exclusion zones for emergency response activities and to assist in selecting the appropriate level of respiratory protection. A third monitor is stored in the HES File Room.

The ITX atmospheric monitors are calibrated monthly and bump-tested daily. The Safety Engineer and/or HES Manager maintains spare calibration gas, sampling equipment, and sensors. The manufacturer or a qualified representative shall handle repairs to the monitors. See the *Safety Equipment and Inspection Manual* (SAFP7000) for inspection and testing protocols.

(D) Fire Fighting Equipment

1. Fire Hydrants

Fire hydrants are located throughout the plant; refer to Appendix B for approximate locations. Plant maintenance and/or an outsourced and approved fire system contractor shall inspect fire hydrants weekly. Items checked include pressure, general condition, and status of valves. Plant HES personnel rotate PIV gate valves annually. See the *Safety Equipment and Inspection Manual* (SAFP7000) for inspection and testing protocols.

2. Fire Monitors

Appendix B shows the approximate locations of plant fire monitors. Fire monitors shall be located in areas with high potential for fire, primarily process areas, tank farms, and low-temperature storage buildings. Monitors supply a 360-degree water deluge pattern.

Plant maintenance personnel shall inspect fire monitors as part of the fire hydrant inspections. See the *Safety Equipment and Inspection Manual* (SAFP7000) for inspection and testing protocols.

3. Fire Hose Cabinets

Six (6) hose cabinets are located throughout the plant. Inside each hose house is a mobile hose reel with toolbox. In these toolboxes are hose adapters, hose wrenches, hydrant wrenches, and hose nozzles. Additional nozzles, wrenches, and adapters are kept in the Emergency Response building 4 Packout Area.

Contract personnel inspect hose houses and hose reels annually per NFPA guidelines. All plant fire hose undergoes hydrostatic testing annually by contract personnel. Leaking hoses are taken out of service and replaced immediately.

Table 12: Firefighting Equipment (Hose Cabinets)

CABINET	AREA OF SERVICE	LOCATION
1	BPU Tank Farm - South	West of Bldg 4A
2	Freezer Bldgs 2, 3, 10W, 40	South of Bldg 10
3	Freezer Bldgs 8, 9, 13, 21, 27	North of Bldg 8
4	MPU Tank Farm, Freezer Trailers	West of MPU Tank Farm
5	CPU Tank Farm, Freezer Trailers	North of BPU T.O.
6	Well, Bldg 41, North BPU Tank	South of Bldg 41

Fire Equipment Cabinet Supplies:

- 1 – 2.5” x 25’ Rubber Core Fire hose w/Brass fittings
- 2 – Standard Hydrant Spanner wrench
- 1 – Brass Reducer 2.5” x 1.5”
- 1 – Gated ‘Y’ Siamese
- 5 – 1.5” x 50’ Red Fire hose

4. Post Indicator Valves

Post indicator valves, also known as control valves, control the flow of water to area sprinkler and deluge systems. Thirty-one (31) post indicator valves (PIVs) are located throughout the plant. Table 13 lists plant PIVs, their location, and their area of service. All PIV’s are locked open using a yellow plastic chain and black American Lock. One key shall unlock all locked valves. In the event of an emergency shutoff the plastic chain can easily be broken. The key to the black lock is kept in the Supervisors’ Office in the Safety Engineers Office Key box. See the *Safety Equipment and Inspection Manual* (SAFP7000) for inspection and testing protocols.

See Appendix B for a map of PIV control systems

Table 13: Firefighting Equipment (Post Indicator Valves)

PIV #	LOCATION	AREA CONTROLLED
1	West of bldg 14	Bldg 14
2	50’ South of Bldg 41	Bldg 41 Sprinklers
3	West of Tank T-68	BPU TF & North Loop
4	North of Bldg 4A	BPU Tank Farm
5	Northeast side of Bldg 1	Bldg 1 Sprinklers
6	South of Water Tower (Across street)	BPU, Bldg 14 Loop
7	South of Water Tower (Across street)	PIV 9 &10
8	South of Water Tower (Across street)	MPU
9	North of Water Tower (Smoke Shack)	Bldg 4 & CPU Loop
10	Northeast of Water Tower	Bldg 10W & Drum Pad
11	North of Bldg 2	Bldg 10
12	Northwest of Bldg 8	MPU & CPU Loop
13	Northeast of Bldg 21	Bldg 21
14	North of Bldg 21	MPU Loop
15	East of Bldg 29 (Across street)	Bldg 29
16	East of Bldg 30	Bldg 30
17	East of Bldg 30	MPU TO
18	East of T-37 (MPU)	MPU Sumps
19	Northeast of Bldg 30	MPU Continuous
20	West of Bldg 29	Bldg 16
21	West of 30-T-63	30-T-63 deluge
22	West of 30-T-71	BPU TO
23	North of 17-T-40 (East of Bldg 34)	MPU Loop and PIV 21 & 22
24	South of Bldg 23	Bldg 17 Deluge
25	Southeast of T-39 (West of Bldg 17)	Bldg 17
26	South of 17-T-18	Bldg 17 Tank Farm (HM19)
27	Northeast of 4-T-51 (South of 28-K-1)	WWT Dike

PIV #	LOCATION	AREA CONTROLLED
28	East of Bldg 24	Bldg 24
29	Southwest of 14-T-2A	WWT
30	West of 28-K-1	WWT
31	Northeast of Bldg 16 (Across street)	PIV 23 and CPU Loop

5. Fire Extinguishers

Fire extinguishers are located throughout the plant for use in incipient stage firefighting only. Those used in this plant are 5-lb, 10-lb, or 20-lb Dry Chemical or Carbon Dioxide (CO₂) extinguishers. The type of fire extinguisher placed in a particular location depends on its expected service. Generally, 5-lb fire extinguishers are found on plant vehicles and forklifts.

Plant fire extinguishers are inspected monthly by plant personnel to ensure the extinguishers are accessible, the safety pin and tamper seal are in place, the discharge nozzle or hose is free of obstructions, the nameplate operating instructions are legible, and the gauge reads full (ABC only). Each department is responsible for inspecting the fire extinguishers in their department. Fire extinguishers that do not pass inspection are immediately taken out of service and set aside in Building 4 Packout area. A supply of replacement fire extinguishers is maintained in Building 4. Plant fire extinguishers are recharged as needed by contract personnel and they are responsible for recharging them. See the *Safety Equipment and Inspection Manual* (SAFP7000) for inspection and testing protocols.

(E) Spill Response Equipment

1. Spill Equipment Stations

Spill Equipment Stations are located throughout the facility (refer to Appendix B). Stations are located at unloading areas for immediate access in the event of a minor chemical spill or release.

Each station is equipped with booms, pads, absorbent granules, shovels, gloves, and body protection. The absorbents available at each station are dependent on the types of chemicals in the vicinity of the station. As a general guideline, yellow and blue absorbents are designed for universal use, pink absorbents are designed for use with acids and caustics, and white absorbents are designed for use with HES Department.

2. Pipe Patch Kit

A pipe patch kit is kept in the Emergency Response building 4 packout area. This kit includes external stainless steel clamps for pipe sizes ½-inch to 5-inch. Also included are deep sockets, ratchet, 6-inch extension wrenches, and

neoprene patching material. The tools are organized in a labeled gray plastic toolbox.

The patch kit shall be used by HazWoper Team members only, as they are trained at the First Responder Operations Level. Kit components shall be replaced as needed by the HES Department.

3. Drum and Tank Repair Kit

A drum and tank repair kit is available in the Emergency Response building 4 packout area. This kit is stored in a labeled gray plastic toolbox and includes non-sparking tools, stopper plug kit, ball plug kit, sheet metal screw kit, mini-stopper plug kit, duct tape, barricade tape, 8-piece dowel/stake set with felt, two “T” bolt patches (3” x 3” and 1” by 3”) , epoxy putty, foam patch with bolts, rubber patch, polyethylene/rubber patch, and clamp with steel strap.

The repair kit shall be used by HazWoper Team members only, as they are trained at the First Responder Operations Level. Kit components shall be replaced as needed by the HES Department.

4. Decontamination Equipment

Decontamination equipment is stored in the Building 4 Packout Area. This includes plastic drop cloths, collection containers, absorbents, scrub brushes, cloth towels, and wash/rinse solutions. Equipment for establishing zones and controlling area access, including fiberglass barriers, cones, and barrier tape are kept in Maintenance Shop.

(F) Medical Equipment

Medical equipment and supplies are located in the First Aid Room in the QC Laboratory in Building 16.

The Medical Team, under the supervision of the HES Department, maintains all medical equipment and supplies.

(G) Personal Protective Equipment

Various types of personal protective equipment (PPE) are available in the facility. The level of PPE required for routine plant tasks has been evaluated and is communicated to employees through Job Exposure Profiles (JEPs) and PPE Assessments. Although general guidelines have been provided for non-routine tasks such as emergency response, the Safety Officer shall advise the Incident Commander as to the PPE requirements for each emergency responder. For guidance in selecting the appropriate PPE for emergency response activities, the Safety Officer shall consult the Firefighting and Chemical Spill PPE Matrices in Appendix C.

I. Respiratory Protection

a) Air-Purifying Respirators (APRs)

Employees trained at the Hazardous Materials Technician level have been provided with full-face air-purifying respirators. Currently, the MSA Ultravue and Advantage 3200 models are utilized within the plant. Full-face APRs are provided to the employee upon successful completion of a medical physical, pulmonary function test, and initial Hazwoper and respiratory protection training. Employees not medically qualified for respirator use shall not be involved on the fire brigade or hazardous materials team..

APRs are primarily used for routine job tasks, but may be used (if required) for spill clean-up operations. Emergency responders shall be instructed in respiratory requirements by the Incident Commander and/or Safety Officer. Chemical cartridges for use with APRs are available free-issue from Maintenance Stores and unit PPE cabinets.

APRs shall be inspected before each use by the employee and annually at the Hazwoper refresher course. Replacement parts such as head straps and flapper valves are kept by the Safety Department. Major repairs shall be addressed by the manufacturer.

b) Self-Contained Breathing Apparatus (SCBA)

Employees trained at the Hazardous Materials Technician level or as Fire Brigade members have been medically qualified for and trained in the use of a self-contained breathing apparatus (SCBA). Eighteen (18) SCBAs are located throughout the plant (refer to Appendix B). Plant SCBAs consist of the MSA UltraElite model full-face mask and 30-minute rated breathing air cylinder.

Although not issued to each employee, SCBAs may be used for routine job tasks in addition to emergency response activities. Emergency responders shall be instructed in respiratory requirements by the Incident Commander and/or Safety Officer.

Plant HES personnel inspect ASRs monthly. SCBA airpaks undergo hydrostatic testing annually. Any repairs to SCBAs shall be addressed by the manufacturer or qualified representative. SCBA airpaks are filled on-site using a three-cylinder cascade system.

c) Emergency Escape Respirators

There are eight 5-minute escape pack/bottles in the plant. Four are located in the MPU Control Room, two at the Chloride unloading station and two at the SO₂ unloading station.

d) Breathing Air Cascade System

Breathing air used in the facility shall meet the Compressed Gas Association (CGA) Grade D specifications. Three high-pressure breathing air cylinders comprise the cascade filling system. These cylinders are stored in Building 4 Packout Area. The cascade filling system is used to refill the breathing air cylinders used for plant SCBAs and emergency escape packs. Emergency responders and selected personnel are trained in air pack refilling operations.

High-pressure cylinders shall be sent off-site for filling, as needed. High-pressure cylinders must be returned to the plant with a certificate of analysis (COA) of the air used for filling the cylinders. The HES Department verifies cylinder content using an air quality test meter upon delivery into the plant, and conducts documented quarterly cylinder content checks.

2. Body Protection

a) Bunker Gear

Bunker gear is provided to all fire brigade members. A bunker gear set includes bunker coat, bunker pants, fire helmet, fire boots, firefighting gloves, and nomex hood all stored in a red gear bag. Bunker gear storage cabinets are located in the Building 4 Packout, Building 1 Warehouse and MPU control room. Fire brigade members may store their bunker gear set in the cabinet closest to their respective work area.

Bunker gear is professionally cleaned after use. Regardless of use, bunker gear sets shall be inspected annually for general degradation.

b) Chemical Suits

To prevent chemical exposure, body protection such as neoprene aprons, acid suits, or saranex suits may be used. The chemical spill PPE assessments are available as guidelines for selecting the appropriate level of body protection for a particular hazard. The Incident Commander with the assistance of the Safety Officer shall specify the required level of body protection for each responder.

Chemical suits are available free-issue from Maintenance Stores and unloading PPE cabinets. Chemical suits are also kept in the Building 4 Packout and spill equipment cabinets. Chemical suits shall be disposed of properly after use, or sooner if damaged.

3. Hand Protection

Several styles of gloves are available in the facility for emergency response. Glove selection shall depend on the chemical/physical agent involved in the emergency, level of protection needed, and task being performed. The chemical spill and firefighting PPE assessments are available in Appendix C as guidelines for selecting the appropriate level of hand protection. The Incident Commander with the assistance of the Safety Officer shall specify the required level of hand protection for each responder.

Chemical protective gloves available for spill response and clean up include neoprene, nitrile rubber, and butyl rubber. Leather and cotton gloves are available as needed to protect against abrasions and lacerations. These gloves are available free-issue from Maintenance Stores and in unit PPE cabinets. Chemical gloves are kept in spill equipment cabinets as well. Medical grade latex gloves are available to the Medical Team and are kept in the building 16 QC Laboratory. NFPA firefighting gloves are included in the bunker gear sets provided to all fire brigade members.

Chemical gloves used in the facility, with the exception of the firefighting gloves, are designed for single use and shall be disposed of properly after use, or sooner if the gloves become damaged.

4. Other Personal Protective Equipment

a) Eye and Face Protection

Eye and face protection is available to emergency responders as needed. The minimum plant PPE requirements include safety glasses with side shields. If additional levels of protection are needed for emergency response, responders may require goggles or a face shield. The fire helmets included in the bunker gear sets have attached face shields to provide eye/face protection. In the event respiratory protection is required, full-face respirators shall provide the desired level of eye/face protection. The chemical spill and firefighting PPE matrices shall provide guidance in selecting the appropriate level of eye/face protection. The Safety Officer shall advise the Incident Commander as to the level of eye/face protection necessary for each responder.

Goggles and face shields are available free-issue from Maintenance Stores and unloading PPE cabinets. A supply of goggles is also maintained in the unit PPE cabinets. The available eye/face protection in the facility is reusable as long as it is in good condition. Protection used in emergency response shall undergo decontamination as needed.

b) Head Protection

Head protection used in the facility is limited to hard hats and fire helmets. The minimum plant PPE requirements include the use of hard hats. Hard hats shall be used for all emergency response activities except firefighting, where the use of a fire helmet is necessary. The Incident Commander and/or Safety Officer shall make the decision as to the level of head protection required for emergency response activities.

Hard hats are available free-issue from Maintenance Stores. Fire helmets are included in the bunker gear set provided to fire brigade members. Hard hats and fire helmets may be reused as long as they remain in good condition. Head protection used in emergency response shall undergo decontamination as needed.

c) **Foot Protection**

As the minimum plant PPE requirement, employees working in process areas shall wear steel-toe safety shoes. In the event additional foot protection is needed, PVC rubber boots and fire boots are available. The chemical spill and firefighting PPE matrices provide guidance in selecting the appropriate level of foot protection. The Safety Officer shall advise the Incident Commander as to the level of foot protection necessary for each responder.

Employees are provided with steel-toe safety shoes as needed. PVC rubber boots are available free-issue from Maintenance Stores. Fire boots are included in the bunker gear set provided to fire brigade members. Foot protection in good condition may be reused. Steel-toe safety shoes shall be replaced on an individual basis as needed. Foot protection used in emergency response shall undergo decontamination as needed.

(H) Emergency Communication Equipment

1. Emergency Alarm Stations

The location of emergency alarm stations in the plant is given in Appendix B. The plant alarm shall be tested periodically by plant Security. The alarm shall be activated at the main switchboard and message 2 shall be played. The weekly test allows plant personnel to become familiar with the activation of the alarm system and ensures that the system remains in good working order. In addition to periodic tests, the alarm system is utilized during quarterly emergency response and headcount drills.

2. Plant Telephones

Landline telephones are located throughout the facility in offices, control rooms, and break rooms. Power failure phones are located in the east end of

building 4A, in the building 4 lobby, in the plant manager's office in building 4, in the front office of building 4, and in the Supervisors' office in building 29. In the event of a plant wide power failure, these phones will be able to access outside lines. The ring sequence for power failure phones is lobby, front office, Supervisors', 4A, and plant manager. Plant telephones are used daily and serviced as necessary.

(I) Emergency Eyewashes and Safety Showers

Emergency eyewash and safety shower stations are located throughout the plant (refer to Appendix B). Stations shall be located wherever a splash potential to employees exists. In emergencies, eyewash and shower stations may be used for decontamination purposes. Fixed and portable eyewash stations are installed in accordance with ANSI Z358.1-1998.

All emergency eyewash and safety shower stations in the plant are inspected weekly by plant personnel. Quarterly inspections on fixed systems are performed by plant Maintenance personnel. Fixed units are flow-tested weekly and quarterly. Portable units are serviced with the water changed out semi-annually by contract services. Repairs are addressed by plant maintenance personnel.

(J) Emissions Control Equipment

Fume scrubbers, designed to reduce air emissions, are present in the facility for various processes. Table 14 lists each fume scrubber present in the plant by its equipment number and location. Also included in Table 14 is a description of the process for which the fume scrubber is used.

In an effort to reduce the emission of Volatile Organic Compounds (VOCs) from the facility, two thermal oxidizers were built for the three process units. A description of each thermal oxidizer is given in Table 14.

Table 14: Emissions Control Equipment

EQUIPMENT NUMBER	LOCATION	DESCRIPTION
FUME SCRUBBERS		
14-FS-16	WWT	Carbon Adsorption at WWT
44-FS-1	BPU	Thermal Oxidizer Scrubber
43-FS-1	MPU	Thermal Oxidizer Scrubber
30-FS-95	MPU	Acid Fumes Scrubber
THERMAL OXIDIZERS		
43-TO-1	MPU	MPU Process Area, Storage Tanks and Packout
44-TO-1	BPU	BPU Storage Tanks and BPU/ Bldg 16 Packouts

(K) Emergency Generators

Plant emergency generators and the areas they service are listed in Table 15. In the event of power failure, the emergency generators come online to supply power to critical process equipment. The Operations Department maintains a list of safety and quality critical equipment. Production and maintenance personnel are trained to activate the generators as needed. The generators operate from a diesel fuel supply maintained by the plant. They are designed to provide temporary power until utilities are restored. Plant generators are inspected biweekly by plant Maintenance personnel and serviced as needed.

Table 15: Emergency Generators

UNIT	SERVICE	MAKE	MODEL	CAPACITY
4-GN-1	BPU Process & Bldg 4	Stewart & Stevenson	350DS	350 kW
4-GN-2	Bldgs 2, 3, 40 & Well	Waukesha Pierce	250ROZD	250 kW
14-GEN-1	WWT, BPU/CPU TO	Onan	500DFED	500 kW
21-GN-1	Bldgs 8, 9, 13 & 21, 27	Sullair	D4800TAX216	150 kW
32-GN-1	MPU Process & Bldg 29	Waukesha Pierce	500ROZD71	500 kW
43-GN-1	MPU TO & B21 Bay 4&5	Kohler	500ROZD	500 kW

XI. Record Retention

Drill minutes and critiques must be maintained for one year.

All training records must be maintained in accordance with the Arkema Corporate Records Management Program. (Active plus 30 years)

Emergency action plan retention period is Sup + 3 (Record are to be maintained until replaced by more current ones plus 3 years)

XII. REVISION HISTORY

00 (12/31/2008) – Original Issue

01 (01/12/2010) – General Revisions, Merged Security Procedures into Manual. Emphasis the use of the Crosby Volunteer Fire Dept, also clarify radio distribution, use of vehicles when incident has no LEL issues, use of SCBA's for ALL ERT responses, MSDS multiple copies, redirect phone calls. See MOC#10-005

02 (08/24/2010) – Revision to security plan per CFATS (record retention, CFATS, Incident Reporting Protocol, Breach Response, defined Security Organization) MOC#10-121.

03 (10/11/2010) – Procedure for lost Kronos badges. See MOC#10-139

04 (07/29/2011) – Changing from First Call to E-Merge Systems and adding info about the CAER line.

05 (09/05/2013) – General Review and changes per ERP Audit Recommendations. See MOC #TBD

06 (8/30/2016) –Added requirements from corporate action item #261903. S

Dorsey

1. Addition of Arkema's 2-call process in the notification section.
2. Addition of an annual shelter-in-place drill.
3. Addition of a security related drill for sites regulated by CFATS and MTSA.
4. Reduction of the frequency of HAZMAT and Fire Team drills from 6/year to 2/year.
5. Reduction of medical related drills from 2/year to 1/year.
6. Removal of site security description
7. Acceptability of the use of table top drills to meet security drill requirement.
8. Reduction of the frequency of emergency response team meetings from monthly to bi-monthly. (P.70)
9. Addition of record retention requirements
10. Addition of lightning precautions in the Severe Weather Precaution section of the Appendix.

XIII. APPENCIES

A. On-Scene Documentation Forms

- Bomb Threat Log Sheet
- Emergency Response Safety Plan
- Personnel Activity and Accountability
- Incident Commander Checklist
- Safety Officer
- Operations Officer
- Medical Team
- Media/Communications Officer
- Decontamination Worksheet

B. Site Maps

- Plant Fire Hydrant & Hoses
- Plant Fireline System
- Plant Shower/Eyewash & SCBA's
- Plant Spill Equipment Cabinets
- Plant Emergency Communication Equipment
- Plant Drainage
- Plant Oil Storage/Sump Locations
- Plant Hazardous Waste Management Areas
- Underground Piping
- Evacuation Routes & Assembly Points
- Topographic Map
- Material Storage Locations

C. Emergency Response PPE Matrix

D. Critical Safety Equipment and Process Safeguards

E. Critical Environmental Safeguards

APPENDIX A – On-Scene Documentation Forms

BOMB THREAT LOG SHEET

Ask as many questions as the caller will answer.

When is the bomb going to explode?

What building is it in?

Where is it right now?

What does it look like?

What kind of bomb is it?

What will cause it to explode?

Did you place the bomb?

What is your name?

Note the following information:

Caller's Voice:

- | | |
|-----------------------------------------|------------------------------------|
| <input type="checkbox"/> Accent | <input type="checkbox"/> Laughing |
| <input type="checkbox"/> Angry | <input type="checkbox"/> Lisp |
| <input type="checkbox"/> Calm | <input type="checkbox"/> Loud |
| <input type="checkbox"/> Clear Throat | <input type="checkbox"/> Nasal |
| <input type="checkbox"/> Cracking Voice | <input type="checkbox"/> Normal |
| <input type="checkbox"/> Crying | <input type="checkbox"/> Ragged |
| <input type="checkbox"/> Deep Breathing | <input type="checkbox"/> Rapid |
| <input type="checkbox"/> Deep | <input type="checkbox"/> Raspy |
| <input type="checkbox"/> Disguised | <input type="checkbox"/> Slow |
| <input type="checkbox"/> Distinct | <input type="checkbox"/> Slurred |
| <input type="checkbox"/> Drawl | <input type="checkbox"/> Soft |
| <input type="checkbox"/> Excited | <input type="checkbox"/> Stutter |
| <input type="checkbox"/> Familiar | <input type="checkbox"/> Whispered |

Language:

- | | |
|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> Well-spoken | <input type="checkbox"/> Foul |
| <input type="checkbox"/> Incoherent | <input type="checkbox"/> Message Read |
| <input type="checkbox"/> Irrational | <input type="checkbox"/> Taped |

Background Noises:

- | | |
|-------------------------------------------|------------------------------------------|
| <input type="checkbox"/> Animal Noises | <input type="checkbox"/> Motor |
| <input type="checkbox"/> Booth | <input type="checkbox"/> Music |
| <input type="checkbox"/> Clear | <input type="checkbox"/> Office machines |
| <input type="checkbox"/> Crockery | <input type="checkbox"/> PA System |
| <input type="checkbox"/> Factory Machines | <input type="checkbox"/> Static |
| <input type="checkbox"/> House Noises | <input type="checkbox"/> Street Noises |
| <input type="checkbox"/> Local | <input type="checkbox"/> Voices |
| <input type="checkbox"/> Long Distance | <input type="checkbox"/> Other: _____ |

Sex of Caller: _____

Age of Caller: _____

If the voice is familiar, what does it sound like? _____

Special words or repeated phrases used by the caller:

EMERGENCY RESPONSE SAFETY PLAN - Page 1

Incident:	
Location:	
Date:	Time:

Site Characterization

Area(s) Affected by Release:			
Surrounding Exposures:			
Temp:	Wind Direction:	Wind Speed:	Humidity:
Access to Scene:			

Site Hazards

Substances Involved:
Primary Hazard:
Secondary Hazards:
Primary Risk:
Secondary Risk:

Control of Utilities

Electric	Turned Off?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Gas	Turned Off?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Water	Turned Off?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Nitrogen	Turned Off?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

Air Monitoring

%O₂ :	% LEL:	CO (ppm):	SO₂ (ppm):
Other Specific Chemical (specify):			

Control Measures

Plan of Action to Stop Source of Release:	
Site Secured:	Facility Shutdown:
PPE Level Required: Initial	Downgrade
Decon Stations Established:	Wet <input type="checkbox"/> Dry <input type="checkbox"/>
Medical Assistance	

EMERGENCY RESPONSE SAFETY PLAN – Page 2

Work Plan

Personnel Assignments – Buddy System/Two in-Two out (Use Assignment/Activity Log)
Team Pre-Entry Briefing – Time:
Team De-Briefing – Time:

Emergency Plan

Signal to Exit Hot Zone:
Evacuation Plan:
Signals to be used if radio communications fail:

Attachments

<input type="checkbox"/>	IC Flowchart
<input type="checkbox"/>	PPE Matrix
<input type="checkbox"/>	Decon Worksheet
<input type="checkbox"/>	Personnel Assignment and Accountability Form
<input type="checkbox"/>	Spill Report/Notification Form
<input type="checkbox"/>	Equipment List and Location

Sketch of Incident Area

PERSONNEL ACTIVITY AND ACCOUNTABILITY – Page 3

Personnel Assignment List		
Position	Name	Time Assigned
Incident Commander		
Safety Officer		
Media/Communications Officer		
Operations Officer		
Environmental Officer		

Personnel Activity Log (Minimum Two in – Two Out)				
Team No.	Name	Assignment	Time In	Time Out

Evacuation Accountability

Time Evacuation Sounded:
Personnel Unaccounted:

INCIDENT COMMANDER CHECKLIST

Incident Commander(s): _____ Date: _____

Duty Checklist:

- _____ Assume command, and review entire checklist.
- _____ Establish a joint command with assisting outside services (if applicable)
- _____ Assess the incident situation and identify:
 - _____ Rescue _____ Sheltering _____ Security
 - _____ Evacuation _____ Containment _____ Medical Aid
 - _____ Public Information/Warning _____ Fire Suppression
 - _____ Other
- _____ Assess available resources and request assistance as needed.
- _____ Develop, approve, and implement an Emergency Response Safety Plan.
- _____ Activate the needed Incident Command System officers, give assignments and brief as necessary.
- _____ Monitor, coordinate, and manage all incident activities.
- _____ Request or give periodic progress reports/briefings.
- _____ Revise the Emergency Response Safety Plan as needed.
- _____ Approve requests for additional personnel, equipment, and resources.
- _____ Authorize release of information to the news media and the public.
- _____ Brief the back-up Incident Commander on the current status before being relieved.
- _____ Approve the plan to release incident personnel, equipment and resources.
- _____ Collect all pertinent reports/logs.

SAFETY OFFICER

Safety Officer: _____

Date: _____

Duty Checklist:

- _____ Check in and establish communications with the Incident Commander.
- _____ Obtain a briefing and receive your assignment.
- _____ Review the checklist
- _____ Activate, organize, and brief emergency responders as necessary.
- _____ Identify hazardous and unsafe situations associated with the incident.
- _____ Assist the Incident Commander in developing the Emergency Response Safety Plan.
- _____ Establish the zones of operation (Exclusion, Contamination Reduction, Support).
- _____ Ensure that emergency responders are wearing the correct PPE.
- _____ Exercise your authority to stop and/or prevent any and all unsafe acts.
- _____ Post danger signs/barriers/tape where applicable.
- _____ Maintain/Update the Emergency Response Safety Plan and the Personnel Activity and Accountability Form.
- _____ Notify relief personnel of the current emergency/safety status.
- _____ When ordered, secure operations and forward all necessary report/logs to the Incident Commander.

OPERATIONS OFFICER

Operations Officer: _____ Date: _____

Duty Checklist:

- _____ Check in and obtain a briefing from the Incident Commander.
- _____ Review the checklist.
- _____ Activate and brief assisting personnel as necessary.
- _____ Participate in the preparation of the Emergency Response Safety Plan.
- _____ Advise on process operation capabilities or pertinent information.
- _____ Make recommendation on tactical portion of the Safety Plan.
- _____ Secure the affected area.
- _____ Establish staging areas for equipment/resources.
- _____ Deliver the necessary manpower and equipment to the site.
- _____ Determine ongoing needs, requesting additional resources as necessary.
- _____ Update the Incident Commander on ongoing activities, as necessary.
- _____ Maintain a log of all operation times, equipment, resources, etc.
- _____ When ordered, secure operations and forward all reports to the Incident Commander.

MEDICAL TEAM

Medical Team: _____

Date: _____

Duty Checklist:

- _____ Obtain a briefing from the Incident Commander.
- _____ Review the checklist.
- _____ Establish an area where emergency responders can be evaluated.
- _____ Evaluate personnel for physical/medical capability upon entering and leaving the Exclusion Zone.
- _____ Determine any special medical needs for the response personnel.
- _____ Provide medical attention to injured personnel.
- _____ Communicate to the Incident Commander the need for any outside assistance.
- _____ When ordered, secure operations.
- _____ Decontaminate any medical equipment used and dispose of contaminated materials in a proper container.

MEDIA/COMMUNICATIONS OFFICER

Media/Communications Officer: _____

Date: _____

Duty Checklist:

- _____ Check in and establish communications with the Incident Commander.
- _____ Obtain a briefing and receive your assignment.
- _____ Review the entire checklist.
- _____ Set up an area designated for news media ONLY (Media Center) and control their activity in this area (it should be located in a safe area away from the Incident Command Post).
- _____ Contact news media personnel.
- _____ Assemble and prepare information for press release messages.
- _____ Establish liaison with local, county, and State agencies for uniformity of all messages to be released to the media or the public.
- _____ Obtain approval from the Incident Commander for release of all messages to the media or the public.
- _____ Transmit messages to the news media.
- _____ Arrange meetings with incident personnel and the news media, if requested.
- _____ Prepare post-incident releases and/or summary information for use by the news media.
- _____ Maintain hard copies of all messages.

DECONTAMINATION WORKSHEET

Personnel _____

Date: _____

Decon Information

Hazardous Materials Involved

Immediate Health Effects of Exposure

Effects of Hazardous Materials on Clothing and Equipment

Hazardous Materials Reactive with water? Yes ____ No ____

Decon Procedures Determined for:

PPE _____

Equipment _____

Skin/Body _____

Emergency _____

Decon Site Selection

Decontamination area located in the “Contamination Reduction Zone” at exit from “Exclusion Zone”.

Decontamination area positioned based upon ground/floor contour and wind direction/air flows? (i.e., uphill, location of drains, wind direction, air flows, etc.)

Notes:

Decon Resource Requirements

_____ Water Supply Checked

HazWoper Team Equipped with (Specify type and, where appropriate, the materials of construction):

_____ Protective Clothing (Body coverings, gloves) _____

_____ Boots _____

_____ Respiratory Protection _____

Decontamination Site Set Up

_____ Decon Station well marked and designated

_____ Run-off considerations – Recheck location of sewers/drains near decon station

_____ Must be contained

_____ Permitted into facility sewer

Approval _____

General Decontamination Procedures

_____ Personnel enter the decontamination area from “Exclusion Zone”

_____ Drop tools on dirty side

_____ Remove contaminants

_____ Flush/shower off

_____ Examine Chemical Protective Clothing for cuts/breaches

_____ Scrub contaminated Chemical Protective Clothing

_____ Remove Respiratory Protection (If outside of clothing)

_____ Remove Protective Clothing

_____ Remove duct tape if used

_____ Unzip Chemical Protective Clothing and remove

_____ Place Chemical Protective Clothing in disposal containers

_____ Remove gloves

_____ First Aid Evaluation

Incident Termination

_____ Disposable materials isolated, bagged, and placed into approved containers

_____ Containers are sealed, labeled, and isolated

_____ All equipment is cleaned and accounted for

_____ Determine if any equipment requires isolation for further decontamination

_____ Decon personnel cleaned

_____ Entry personnel cleaned

_____ Decon solutions contained and disposed of properly

_____ Terminated decon operations

APPENDIX B – SITE MAPS

APPENDIX C – EMERGENCY RESPONSE PPE MATRIX

APPENDIX D – CRITICAL SAFETY EQUIPMENT and PROCESS SAFEGUARDS

APPENDIX E – CRITICAL ENVIRONMENTAL EQUIPMENT